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"GLOBAL ENVIRONMENTAL CHANGE
AND THE NATION STATE"

edited by:

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This PIK Report represents a peer-reviewed selection of 50 papers of the 96 presentations delivered at the 2001 Berlin Conference on the Human Dimensions of Global Environmental Change "Global Environmental Change and the Nation State", held 6-7 December 2001 in Berlin. The 2001 Berlin Conference was organised by the Environmental Policy and Global Change section of the German Political Science Association, in co-operation with the Potsdam Institute for Climate Impact Research, the Environmental Policy Research Unit of the Free University of Berlin, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, and the Heinrich Böll Foundation. Comments should be directly addressed to the authors. The production of these proceedings has been made possible through generous funds from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

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Preface

What is the role of the nation state in times of global environmental change? Will it be international regimes that determine the future evolution of successful environmental policies, or rather horizontal diffusion processes across nation states, triggered by policy innovation within nation states? What role is left for the nation state given the manifold challenges of transnational non-governmental organisations, new emerging forms of public-private governance, and the increasing power of the global market place?

These fundamental questions led the German Political Science Association, represented through its Environmental Policy and Global Change section, to choose the theme "Global Environmental Change and the Nation State" for its 2001 Berlin Conference on the Human Dimensions of Global Environmental Change, held 7-8 December 2001 in Berlin.

The two-day meeting brought together 166 researchers from 28 countries with many different perspectives on global change and the nation state, including students of international relations and international law, environmental sociologists and economists, as well as experts on national environmental policy and comparative politics. Key note addresses were delivered by Klaus Töpfer, the Executive Director of the United Nations Environment Programme (UNEP), and Jürgen Trittin, the German Federal Minister of the Environment, Nature Conservation and Nuclear Safety.

The conference was formally endorsed by the Institutional Dimensions of Global Environmental Change (IDGEC) core project of the International Human Dimensions Programme on Global Environmental Change (IHDP), the global umbrella research network in this field, and organised by the Global Governance Project—a joint research programme of the Potsdam Institute for Climate Impact Research, the Free University of Berlin and Oldenburg University—in close co-operation with the Environmental Policy Research Unit of the Free University of Berlin. Generous support was provided by the Heinrich Böll Foundation and the German Federal Ministry of the Environment, Nature Conservation and Nuclear Energy. Additional assistance and endorsement was provided by the German Association for the United Nations, Berlin-Brandenburg Chapter; the Federation of German Scientists (VDW); the Canadian Embassy in Berlin; and Adelphi Research, Berlin. Last but not least, the conference would not have been possible without the unrelenting enthusiasm of our student volunteers from the Student Working Group on International Environmental Policy at the Free University of Berlin. We like to thank all supporters of the 2001 Berlin Conference for making this highly stimulating and fruitful meeting possible.

This Proceedings volume presents the fifty papers of the 2001 Berlin Conference that we saw as the most useful and valuable within the context of the conference. All contributions have been reviewed for publication, and not all papers submitted could be included in the final Proceedings volume. We hope that the Proceedings of the 2001 Berlin Conference will enrich the academic debate on the role of the nation state in times of global environmental change, and will carry a flavour of the lively and thought-provoking debates during the 2001 Berlin Conference.

We now look forward to the upcoming 2002 Berlin Conference on the Human Dimensions of Global Environmental Change, which will address the theme "Knowledge for the Sustainability Transition: The Challenge for Social Science". It will be held 6-7 December 2002 in Berlin; detailed information is available at www.environmental-policy.de.

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CONTENTS

Global Environmental Change and the Nation State: The Scope of the Challenge

*by Frank Biermann**

Breathless and torn rushes the world into the new Millennium, begins the 2000 Report of the German Advisory Council on Global Change.[1] Global reality gives justice to this rather poetic line. Most countries continue to expand production and consumption by an global average of 4% p.a., and national economies, once separate, are steadily growing together in one global market place.[2] This breathlessness of human activity, however, increasingly leaves its traces on the earth system. Modern production, transportation and consumption of goods boost the burning of fossil fuels and accelerate the natural greenhouse effect of the earth system, with geophysical changes such as sea-level rise, regional climate change and increased storms and natural disasters becoming a likely consequence. The loss of biological diversity, the depletion of the stratospheric ozone layer, the spread of persistent organic pollutants and the global degradation of soils are further illustrations of an earth system in transformation, if not in crisis.

Many writers have pointed to the inherent difficulty of attaining the sustainable development of a globally interdependent system by relying on a dividing concept inherited from the 19th century—the nation state (cf. the key note address by German Federal Environment Minister JÜRGEN TRITTIN).[3] Several political scientists have thus investigated options for building strong and effective international institutions and establishing new forms of global governance.[4] Others, however, remain cautious and point to the continuing relevance of the nation state system. They argue, for example, that economic globalisation will not hinder environmental improvements, but foster the diffusion of successful policies and more efficient technologies between nation states, without the intervention of international institutions.

So far, these strands of research have remained rather isolated, with scholars largely being engaged in debate with colleagues from their own communities. The 2001 Berlin Conference on the Human Dimensions of Global Environmental Change "Global Environmental Change and the Nation State", held 7-8 December 2001, was meant to address this situation. The conference brought together researchers from a variety of perspectives to engage in fruitful dialogue and exchange. This volume presents the fifty best papers submitted during this two-days deliberation.

International institutions: Solution to the global environmental crisis?

One group of researchers represented in this volume, trained mainly in the field of international relations (IR), focus on international environmental institutions as agents of environmental governance in the global realm. This research programme is closely embedded into the general IR discourse on states and institutions. In many IR theories, the nation state is seen as the pivotal actor that shapes the international system and the expectations of other state actors. Such statism stands at the centre, for example, of the realist research programme,[5] which denies any significant independent role for intergovernmental institutions and organisations, or for non-state actors. Likewise, many game theoretical or economic approaches share the statism of the realist paradigm.[6] Realist statism has been challenged for many decades:[7] Institutionalists have asserted new forms of complex interdependence relationships between industrialised countries[8] and have argued that intergovernmental co-operation is both theoretically possible and empirically undeniable;[9] global structuralists and neo-Marxists have posited global (class) structures as core concepts to understand the capitalist world system,[10] and constructivists have challenged statism by pointing to the context-dependency of the definition of states, which are seen as far from unitary and rational.[11]

Since the mid-1980s, international environmental

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1 German Advisory Council on Global Change 2001, p. 13.

2 Jakobeit 2001.

3 See for example Schellnhuber 1998 and 1999; Schellnhuber and Biermann 2000; Streeten 1989.

4 See for example Young 1990 and 1997.

5 Waltz 1959 and 1979; Grieco 1988 and 1990.

6 See for example Helm 1998 and 2000.

7 See for example Keohane 1986.

8 Keohane and Nye 1977 and 1987.

9 See for example, Axelrod 1984; Oye 1986; Keohane 1984.

10 See for example on the 1970s-debate Caporaso 1978, and Senghaas 1977. See also Cox 1989, and on recent German writing Altvater 1993 and 1994; Altvater and Mahnkopf 1997.

11 See for example Albert 1994; Diez 1996; Liftin 1994; Ulbert 1997; Wendt 1992.

policy too has became a mainstream topic for IR scholars, within the analysis of international regimes as the central meeting ground for different schools in the IR community.[12] Theoretical discourse on international environmental policy has followed the cycle of political developments: Research focused first on the emergence of international environmental regimes[13] and of the norm-setting process within regimes.[14] Then, following the enormous growth in the number of international regimes in the 1980s and 1990s, scholars turned their attention to the actual influence these regimes had on policies pursued by nation states—a debate about "regime effectiveness" that has produced an impressive amount of literature in recent years.[15]

The key premise of this literature is that the global environmental crisis requires intergovernmental institutions to constrain the behaviour of nation states. It is argued, often rather implicitly, that in a world with no intergovernmental institutions and with only nation states acting independently, the state of the global environment would be significantly worse. The political motive driving this stream of IR research then is the question of how to design institutions in a way that makes them more effective. The rationale for this premise is often some version of Hardin's parable of "the tragedy of the commons".[16] Without any constraints, nation states—like other self-interested actors—would seek maximum benefits for themselves while neglecting the potential damage of their action for the greater good, such as the atmosphere. In a world where only individual state rationality has its reign, collective outcomes would inevitably be sub-optimal.

IR research on environmental regimes has provided a number of useful insights into the factors that could make regimes more influential on state action (cf. the contribution by RONALD B. MITCHELL). Some research points to the relevance of regime design.[17] In the case of oil pollution, for example, it has been shown that different international norms and verification procedures have entirely different outcomes on the overall effect of the regime.[18] Different modes of regime allocation are also likely to influence regime effectiveness, for example in climate policy.[19] Crucial, too, is whether a given regime includes systems for reciprocity and sanctions or rewards, which would require as a first step a credible verification system that assures all actors that their, and others', behaviour is known.[20] Some scholars—especially those who base their arguments on game theory[21]—have argued in favour of strict sanction systems to punish free-riding nation states. Others see less confrontational approaches as more likely to be effective, since most nation states do not willingly breach agreements, but rather do so for lack of the necessary resources.[22] The co-operative approach taken by the parties to the Montreal Protocol[23] vis-à-vis the default of the Russian Federation might serve as an example.[24]

Apart from the design of regimes—which could in theory be altered by states in subsequent negotiations—IR research points to a number of additional, external factors that might explain variation of success among regimes. Crucial variables are the structure of problems and issue areas: controlling the phase-out of chemicals for which substitutes are widely available is quite different from halting soil degradation in arid countries through international law. In the case of regional regimes, the characteristics of their members are key factors in explaining cross-regional variation in regime effectiveness. Finally, the overall context matters, such as the general economic situation or non-environmental political concerns that might explain, for example, Soviet policies in the regime on long-range transboundary air pollution in Europe.[25]

Notwithstanding the vast amount of literature on the influence that intergovernmental regimes have on national environmental policies, the IR community still lacks a generally accepted definition of effectiveness,[26] which has given rise to a number of conceptual

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12 See on regimes, Haggard and Simmons 1987; Hasenclever, Mayer and Rittberger 1997; Kohler-Koch 1989; Krasner 1983; Rittberger 1995; Wolf 1991.

13 See for example List and Rittberger 1992, and Young 1989 and 1991; also the work on epistemic communities as influential factors in regime creation, Haas 1990a and 1990b, 1992, or the interest-based approach of Sprinz and Vaahtoranta 1994.

14 See for example Gehring 1994; Oberthür 1997.

15 On regime effectiveness, see for example the contributions to the edited volumes Haas, Keohane, and Levy 1993; Keohane and Levy 1996; Miles et al. 2002; Victor, Raustiala and Skolnikoff 1998; Weiss and Jacobsen 1998; as well as Bernauer 1995; Helm and Sprinz 2000; Jakobeit 1998; Sprinz and Helm 1999; Young 2001; Zürn 1998.

16 Hardin 1968.

17 For an overview about research on institutional arrangements see Prittwitz 2000.

18 Mitchell 1994a and 1994b.

19 Tóth 1999.

20 Mitchell 1998.

21 See German Advisory Council on Global Change 2000 for a discussion on game theory, including policy recommendations in favour of regimes with strict sanctions.

22 Chayes and Chayes 1993, 1995. For a legal perspective see for example Wolfrum 1998.

23 Protocol on Substances that Deplete the Ozone Layer 1987. See here Benedick 1998.

24 Victor 1996.

25 Levy 1993.

26 See for example Young 2001 (p. 107), who observes that "[t]here can be no doubt that the tendency to conduct in-depth case studies using somewhat different definitions of key concepts or even altogether different concepts is a real problem in this field of study".

papers on this elusive dependent variable.[27] Concepts of regime effectiveness or success range from assessing the *output* of the regime in terms of legal promulgations or policies enacted (an approach typical for much legal writing) and *behavioural change* amongst political actors (outcome) to an appraisal of the eventual *environmental impact*, that is, whether changes in state behaviour have actually improved the state of the ecosphere.[28] While most researchers work with qualitative indicators of effectiveness—such as the widely quoted three "c's" put forward by Keohane, Haas and Levy[29]—others have sought to develop quantitative indicators, including a recent attempt to map the effectiveness of intergovernmental agreements on a scale of 0 to 1.[30]

The 2001 Berlin Conference focussed less on general assessments of regime effectiveness but rather on detailed case studies, that is, close examinations of individual countries, or groups of countries, and their relationship with international institutions. The influence of international institutions on individual countries generally depends on a number of specific characteristics of the countries involved, including—arguably the most important—the level of economic development. Any international institution is likely to have different effects in countries such as Tanzania, Russia, Samoa, or the United States.

This volume thus includes studies of various countries of different levels of development. This encompasses, first, case studies of developing countries, where one expects special conditions for international institutions to influence national environmental policy, including country studies on India (PHILIPPE CULLET; SHOBAN K. PATTANAIK/LENIN K. BABU) and Taiwan (in comparison with Canada, cf. TSE-KANG LENG). Central and eastern European countries are faced with a transition to a market economy, which creates special conditions for the development of national environmental policies and external influences. This is exemplified by case studies on the role of multilateral environmental agreements for implementing cleaner production programmes in the countries in the Danube area (TAMILLA GAYNUTDINOVA) and a case study on environmental crime and the adequacy and effectiveness of strict environmental standards in Russia (MARIA IVANOVA).

This Proceedings volume also presents country analyses on the influence of international institutions on industrialised countries, such as Sweden (GLENN S. HODES/FRANCIS X. JOHNSON) and the United States of America (GLEN SUSSMAN).

Other contributions analyse variations between countries, including comparisons of the United States, China and East Asia (PAUL G. HARRIS), intergovernmental regimes and transnational networks to protect rivers in Europe and East Asia (TUN MYINT), as well as studies that investigate the relationship of international environmental institutions and public involvement in a critique of the discourse of 'administrative rationalism' (ELIN KELSEY) and the role of transnational research communities as examples of social networks (ELIZABETH L. MALONE/SYLVIA EDGERTON), and the question of conflict resolution in environmental negotiations (MARY JO LARSON).

Globalising environmental policies through nation states: The horizontal diffusion of policies and technologies

Many writings of IR scholars underutilise findings from experts on (comparative) national environmental policy. Surely domestic factors are accounted for in IR research: much recent writing on international relations focuses on two or three level games that attempt to integrate negotiations between state governments with domestic negotiations within states, for example between environmentalists and industry or between different levels of bureaucracies.[31] However, first and foremost the literature on international environmental co-operation relates to general IR theories and debates. It is IR theories that are being applied to the study of international environmental co-operation, and it is these IR theories that many students of international environmental co-operation strive to contribute to. Often, studies on international environmental politics draw predominantly on authors of the IR community, but not on those colleagues who are working on the same political problems—for example, climate change—from an entirely different angle: comparative politics and policy analysis.

This disjuncture is the more interesting since many researchers from comparative law and politics, innovation studies, and environmental policy have asserted that the role of the nation state remains central, and that international institutions in many cases

[27] See for example Bernauer 1995; Helm and Sprinz 2000; Keohane 1996; Underdal 2002; Young 2001.

[28] Cioppa and Bruyninckx 2000.

[29] See Keohane, Haas and Levy 1993. They argued that essentially three different forms of effects can be distinguished, the so-called three "c": improving the *c*ontractual environment, increasing *c*apacity on the national level, and raising *c*oncern among decision-makers on different levels.

[30] Sprinz and Helm 1999; Helm and Sprinz 2000; reviewed in Young 2001, pp. 108–17.

[31] See on two-level games Putnam 1988; see for general IR research on the national-international nexus for example Risse-Kappen 1991, 1995. For environmental work bridging the divide, see contributions to Hanf and Underdal 2000.

are epiphenomenal (MARTIN JÄNICKE). This claim is that the globalisation of national environmental policies, rather than international institutions, has been responsible for the many environmental successes of the last decades.[32] Contrary to critics of globalisation and proponents of the "free-rider" hypotheses, a number of empirical studies offer evidence for an environmental "race to the top" rather than a "race to the bottom". According to this literature, there is no emigration of industries to "pollution havens" that others fear will be the outcome of a globalised economy based on competitive nation states.[33] Some researchers have claimed that the globalisation of environmental policy observable in recent years is to be described "in very large measure" as the outcome of horizontal policy diffusion instead of the influence of international regimes (even though regimes are seen as important agents of diffusion of policies and technologies).[34] According to many participants in these debates, environmental research thus needs to focus on the processes by which nation states cause or influence the diffusion of innovative environmental policies around the world[35]—a variant of global environmental governance that has been, it is claimed, "almost completely ignored".[36]

Contributions to this volume hence include studies on the role of pioneering countries as well as empirical case studies on diffusion processes (KERSTIN TEWS/PER-OLOF BUSCH). Other contributions are based on the premise that it is especially international markets that are a crucial factor in shaping the diffusion of (environmental) policy. In particular, it is claimed that lead markets, in which more efficient or otherwise more environmentally friendly technologies and policies have been developed, initiate diffusion processes to other countries through the market mechanism without any significant influence of international institutions (MARTIN JÄNICKE/KLAUS JACOB). Similar to this argument are studies on the diffusion of new policy instruments within Europe (ANDREW JORDAN ET AL.), on the influence of external factors on the shaping of market instruments such as emissions trading (SASCHA LAFELD), and on the question of whether a European integrated product policy can contribute to solving world-wide environmental problems associated with products consumed in the European Union but produced in different parts of the world (LYDIA ILLGE ET AL.).

The 2001 Berlin Conference, as well as this Proceedings volume, was meant to be a venue to engage both communities in fruitful debate and to seek common ground between what we conceive of as *vertical* (that is, triggered by international institutions) and *horizontal* environmental policies. The conference participants did not assume that either one of these approaches alone can explain the development of national environmental policies. In any given case, national environmental policies will be influenced both by direct contacts with other countries (horizontal environmental policies) and by international institutions (vertical environmental policies). This volume strives, however, to contribute to a deeper understanding of the interlinkages of the various factors at play in specific cases. What is the role of horizontal diffusion of environmental policies, and conversely, which national behaviour can be ascribed to the effects of international institutions?

While most writing on "regime effectiveness" draws on case studies of specific issue areas instead of country studies (for example, studies on the effectiveness of the ozone regime), and while most writing on comparative environmental policy has neglected international institutions as an explanatory variable, this volume attempts to bridge this divide by focusing on case studies that analyse the influence of *international environmental institutions on specific countries, as compared to horizontal, transnational influences*. This approach allowed for many interesting insights contained in the various chapters of this Proceedings' volume that combine the strengths of both communities, and have led to richer contributions from political science and comparative politics to interdisciplinary research on the human dimensions of global environmental change.

Rethinking national sovereignty and global environmental change

This research from the various sub-fields of political science is mirrored in much recent writing in the field of international law. While it has long been accepted among international legal theorists that a state may not use its territory in a way that causes serious harm to other states,[37] it was felt in recent decades that this simple prohibition of transboundary pollution would only inadequately meet the challenges of global environmental problems such as climate change.[38] Lawyers have thus embarked on developing new legal approaches that would place new constraints on state

[32] See for instance Conrad 1998; Jänicke and Jörgens 1998 and 2000; Jänicke and Weidner 1997.

[33] See Vogel 1995 on the "race to the top" hypothesis. See for an extensive economic discussion Althammer et al. 2001.

[34] Kern, Jörgens and Jänicke 2001, p. 1.

[35] Kern 2000; Kern, Jörgens and Jänicke 2001.

[36] Kern, Jörgens and Jänicke 2001, p. 3.

[37] This was decided in the landmark Trail Smelter Arbitration 1938/1941; discussed in Kiss 1983; Nanda 1989; Sands 1995.

[38] See for example Palmer 1992.

behaviour (PETER H. SAND; AYKUT ÇOBAN; CORNIS VAN DER LUGT). It has been proposed, for example, to conceptualise the atmosphere as a "shared resource"[39] of all nations or as a "common heritage of humankind".[40] In recent legal documents, the threats to both the climate and biological diversity have been declared a "common concern of humankind",[41] though the legal consequences of this concept remain unclear.[42] The UN secretary-general, among other experts, has recently suggested revitalising the UN Trusteeship Council to safeguard certain environmental goods as global trusts of humankind,[43] an idea that is especially elaborated in Sand's contribution.

The debate on the respective influence of intergovernmental institutions versus transnational diffusion on national policies, as well as the new role of non-governmental actors both from the environmental community and from business (cf. below), also gives rise to new forms of "post-sovereign governance" (BRADLEY KARKKAINEN), which integrate national and international, state and non-state governance.

When global is local: Global versus national instrument choice

Such post-sovereign governance might be reflected, for example, in regimes that are negotiated at the global level, but that leave significant decision-making power with nation states by merely agreeing on international standards for information-sharing to enable governments to take better and more informed decisions (DAVID M. DRIESEN). The 2000 Cartagena Protocol on Biosafety may be one such regime in which global decision-making and national standard-setting intertwine in unprecedented ways (AARTI GUPTA).[44] Likewise, recent discussions on the precautionary principle and whether it constrains or gives free reign to national action in an era of global interdependence can also be in this vein (STEVE MAGUIRE/JAYE ELLIS). As a special case of post-sovereign governance can be seen the emergence of private global regimes that bridge global and local governance systems and that may have, in certain cases, substantial influence on behaviour. These include, for example, systems for greenhouse gas emissions trading between state and non-state actors (CHARLOTTE STRECK).

The nation state in regional integration organisations: The EU experience

The role of the nation state takes an entirely new turn with the emergence of supranational organisations for regional economic, political and social integration. The European Union is a unique case in this respect because of its deep integration, but it is not unlikely that other regional integration organisations and agreements, such as the North American Free Trade Agreement, will evolve in a similar direction at least regarding environmental policies. Therefore, the European experience is of special interest for the larger questions debated in this volume.

The European Union provides an interesting case in both its external and internal influences. Externally, the European Union is the main institution that influences national environmental policies of eastern European states willing to accede to the Union over the next years. Contributions to this volume hence include case studies on the influence of EU legislation on national environmental policies in Lithuania (RUTA BUBNIENE/ANDRONE ALIJOŠIUTE) and central and eastern European countries in the Baltic region with regard to water pollution prevention policies (GULNARA ROLL/EVELIN LOPMAN). Internally, the European Union is a special case of the influence of international institutions on national policy, as well as of the horizontal influence of other nations.[45] The core question here is whether increasing European integration will eventually result in some form of convergence of national environmental policies over time. Case studies address the 'problem of fit' regarding national implementation of the EU Integrated Pollution Prevention and Control directive (THEO DE BRUIJN) and regarding policies on renewable energy sourced electricity within the European Union (VOLKMAR LAUBER; DANYEL REICHE). Finally, the European Union is—not different from "other" nation states—related to global international institutions that influence EU policies, and that the EU in turn tries to influence. Here, this volume includes case studies on external EU policies in the issue area of desertification (MINNA JOKELA), climate (SEBASTIAN OBERTHÜR/DENNIS TÄNZLER), and climate and biodiversity in comparison (JÜRGEN SCHEFFRAN/SUSANNE STOLL-KLEEMANN).

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39 See Toronto Declaration 1988; Ottawa Declaration 1989. On shared resources see Birnie and Boyle 1992, 215–50.

40 See Malta's proposal at the 43rd session of the UN General Assembly in 1988.

41 See UNGA Resolution 43/53 (1988); United Nations Framework Convention on Climate Change 1992, preamble; Convention on Biological Diversity 1992, preamble.

42 See Biermann forthcoming; Brunnée 1989.

43 See Desai 2000.

44 Gupta 2000a and 2000b.

45 Jachtenfuchs and Strübel 1992; Andersen and Lieffering 1997; Jordan and Lenschow 2000; Knill and Lenschow 2000.

Global governance by non-state actors?

In recent years, non-state actors have gained relevance in world environmental policy.[46] Private actors are not new to the study and practice of international relations: commercial corporations with transnational reach have had a major influence since medieval ages, from the political clout of larger banks in renaissance economy to the empires run by private European holdings in the early colonial times. Non-profit groups also had some influence in the past, for example regarding the abolishment of slavery.[47] However, the growing complexity of problems has increased the visibility of non-state actors in the negotiation of international treaties as well as in national environmental policies. The growing power of non-state actors, as asserted by many, sheds new light on the role of the nation state.

This volume thus includes a variety of contributions that discuss the role of non-state actors in environmental policy development such as case studies on the relevance of private actors in Mexican environmental policies (RAUL PACHECO-VEGA), the role of private environmental consulting for national environmental policy (WOLFGANG MEYER), and the increasing privatisation of world environmental policy (TANJA BRÜHL). One study starts, in a sense, from the very bottom of global governance—the public perception of climate change among individual citizens (in Italy and the United Kingdom) and their preparedness to become engaged in solving the problem (IRENE LORENZONI/IAN LANGFORD).

Another challenge to the notion of the nation state as a rational, self-interested and unitary actor in international environmental policy are case studies that focus on sub-national actors working through transnational coalitions. Some of these, such as the International Council of Local Environmental Initiatives, might be more influential for environmental policy on the local level than many international institutions when it comes to life-style changes or changes in local transportation policies and patterns. Is global governance through extensive networks of private subnational actors, instead of intergovernmental regime-building, the most promising way to solve the global environmental crisis? This volume includes case studies on transnational governance by subnational actors from Cameroon (PAMELA A. AGBOR/WALTERS A. ARREY) and Bolivia (KRISTER ANDERSSON), as well as a more general contribution on Local Agenda 21 processes (ANGELA OELS).

Non-state actors that have generated much scholarly interest in recent years, are scientists and their increasingly influential role in issue areas of extreme complexity and uncertainty.[48] With a view to the role of the nation state, it is especially fitting to investigate the influence of the myriad global scientific assessment institutions that have been established in recent years, such as the Intergovernmental Panel on Climate Change (IPCC), which comprises the combined efforts of over 2500 climate scientists. In what ways are nation states influenced in their decision-making by international scientific mega-corporations such as the IPCC? This volume includes contributions that explore this timely question, including one case study on the role of transnational coalitions of advocacy scientists (RAINER GRUNDMANN) and one on the IPCC (BERND SIEBENHÜNER).

Nation states and world markets

The environmental policies of nation states are shaped not only by the double influence of international institutions and horizontal transnational diffusion processes, but also by a multitude of other non-environmental developments. Most prominent is economic globalisation. Whether economic globalisation prevents nation states from adopting effective environmental policies, or whether it assists such adoption by opening up avenues for lead markets to spread their more efficient technologies to other nations, is a question open to debate, which we believe runs through many contributions to this volume.

Some contributions, however, especially concentrate on the interlinkages of global markets and economic globalisation, and the options for nation states to develop effective environmental policies. Case studies address the influence of the export sector on the domestic environmental policies of Chile (DANTE FIGUERA), as well as the role of international financial institutions in world environmental policy (MORTEN BOÅS), international influences on the local preservation of fish stocks (FRANK ALCOCK), and the influences of markets on environmental protection in the North American Arctic (JERRY MCBEATH). A crucial influence on world environmental policy is the global free trade regime under the World Trade Organisation (HENDRIK VOS ET AL.; JOHN KIRTON).[49]

[46] See for an early debate on non-state actors Keohane and Nye 1972; see also Jakobeit 1996 and for US research, Princen, Finger and Manno 1995; Raustiala 1997; Wapner 1996. For recent German "critical" NGO research see Altvater et al. 1997; Brand 2000; Walk and Brunnengräber 2000.

[47] See for example Nadelmann 1990.

[48] Agrawala 1998a and 1998b; Biermann 2000a and 2002; Clark et al. 2001; Jäger 1998; Jasanoff 1986, 1990 and 1996; Jung 1999; Siebenhüner, forthcoming; VanDeveer 1998.

[49] See for example Anderson and Blackhurst 1992; Biermann 2001b; Charnovitz 1993 and 1996; Esty 1994; Helm 1996;

The 2001 Berlin Conference did hardly solve the analytical problems and quandaries laid out in this introduction. What the conference contributed to, however, was to bring together distinct communities of scholars from different fields and sub-disciplines to shed light on a crucial question of global governance in the 21st century—the present and future role of the nation state in times of significant man-made changes to the earth system.

This Proceedings volume brings together students of international relations, especially of the effects of intergovernmental environmental regimes, international lawyers, experts on national environmental policy and comparative politics, as well as scholars who have thought extensively about the relationship of non-state actors and the nation state. We hope that these Proceedings, as well as the lively discussions during the 2001 Berlin Conference, will present crucial insights into the relationship between the nation state and global change, will help foster mutual understanding and academic exchange, and might even shape additional joint research efforts in the upcoming years.

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The Role of the Nation State in International Environmental Policy

by Jürgen Trittin[*]

There is a lot of talk these days about the actual power of globalisation, about "globalitarian regimes" (Ignacio Ramonet) and global environmental governance. However, politically we still define ourselves as citizens of a nation state. But what influence does this nation state have in a globalised world? The issue you are addressing is: how far-reaching is national environmental policy's influence today? National environmental policy requires a great deal of staying power, but its influence is considerable. In 1972, Germany banned the use of DDT. This was the first ever law banning one of the persistent organic pollutants (POPs). A ban was also gradually enforced on PCP and PCB at the end of the 80s. At the same time alternative substances were sought to further restrict the use of such toxic and persistent chemicals.

Subsequently, the European Council followed the German process and, by means of directives, banned the placing onto the market of various POPs, such as PCP and PCBs. However, POPs were still produced, particularly in India and China. So ultimately, the ban in Germany did not make a significant contribution to environmental and health protection. Global atmospheric deposition of these chemicals causes damage, inter alia to the Inuit. Finally, Klaus Töpfer seized the initiative, as Head of the United Nations Environment Programme, to develop a Convention on POPs. This Convention on phasing out the manufacture and use of twelve POPs was adopted in Stockholm this year.

The Convention is currently being ratified by individual nation states. It will enter into force after ratification by 50 of 104 signatory states. Germany will be one of the first countries to ratify; the Act has already been submitted to the Bundestag. During this phase, each nation state still has an important voice in the international forum: the quorum must be achieved. As developing countries bear the main burden of this Convention to protect man and the environment, I favour providing technical and financial assistance. We expect the Convention banning POPs to enter into force in two to three years. In other words: it took about 30 years from the first ban at national level up to the global ban on the so-called dirty dozen. We cannot afford to spend so much time on each individual environmental problem.

We were much quicker when it came to the Biosafety Protocol, as the initiative here began at international level. At the Earth Summit in Rio, an international law convention was adopted on the conservation of biological diversity. Three years later, in 1995, the Second Conference of the Parties in Jakarta decided that a supplementary instrument on biological safety should be elaborated, the so-called Biosafety Protocol. The goal of this Protocol is to conserve biological diversity when importing genetically modified organisms. At present this primarily concerns seeds.

It took another five years to negotiate a corresponding protocol text. The Kohl government did not support a convention under international law, but with this stance was isolated within the EU. The community of nations finally elaborated a text, which was to be signed in Cartagena da Indias (Columbia) in February 1999. At the very last minute the Miami Group—the USA, Canada, Australia, Argentina, Chile and Uruguay—put a stop to this. Individual nation states thus successfully flexed their muscles.

However, the community of nations had the most staying power: in Montreal in January 2000 we approved the text of the Biosafety Protocol, and adopted it in May 2000 at the 5th Session of the Conference of the Parties. We are currently preparing for ratification in the EU and in the individual Member States. I hope that this Protocol enters into force soon so that its positive effects can be felt. Around 130 parties were involved in elaborating the Protocol, which explains the five-year period of preparation.

Germany does not participate in such negotiations as a nation state: we can only work actively within the EU. The EU Council Presidency and the Commission act as 'spokesmen'. Still I do not consider this a deprivation of the nation state's power. On the contrary: in the field of environmental policy, it has proven highly useful for the EU to speak with one voice, and to present a united front just like one strong nation state at global environmental conferences such as in Bonn or Marrakesh. This made it possible for us to continue the Kyoto process in Bonn, despite the blockade by the USA.

I would therefore like to once again pose the question, this time in an EU context: how much influence does national environmental policy still have today? To put it in provocative terms: independent national

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environmental policy no longer exists in the EU. In a common market, national environmental policy is too short-sighted and inadequate. However, EU environmental policy is not only oriented to the common market. Environmental policy is very much a community issue; particularly in legal areas, it enables parliament to be involved in the decision-making process. It is interactive at Europe level. In general environmental policy benefits from this, even if the EU sometimes initially holds back frontrunners, as was the case with the ban on TBT.

EU legislation is innovative. The previous German government struggled with the modern principles of environmental law, transparency and participation until it was voted out in 1998. Germany was the only EU Member State not to sign the Aarhus Convention right away. This objection had tradition and bordered on the boycott of EU law. The CDU/FDP coalition at that time only reluctantly implemented the EIA Directive of 1985 and the Environmental Information Directive of 1990, after a ten-year delay and ultimately in an insufficient manner. In the end, the Federal Länder went so far as to act as an extension of the Chemical Industry Association and to call upon the Mediation Committee! When the matter at stake was to simply implement an EU Directive without any amendments in the German Bundestag! Even at that point in time this was almost a call for disobedience vis-à-vis the law.

With the aid of an EU Commission penalty payment action, the German government put an end to the rejection of democratic European rights and entered the "Article Law" into force. In the case of environmental legislation, Brussels now has a greater influence than the nation state, a development I expressly welcome. Without Brussels, we would not, for example, have been able to achieve a high level of environmental protection for the disposal of end-of life vehicles in almost all western European nations. Some nations would perhaps have introduced something along those lines, but not all. The result of EU environmental protection policy is, however, that we will increase the recovery quota to 95% and the recycling quota to 85% in all EU Member States by 2015. From 2003 there will be a ban on the use of cadmium, lead, mercury and hexavalent chromium for new vehicles. The collection and recovery obligation of the vehicle manufacturer creates the necessary dynamics for a swift implementation in practice.

Communitarisation does not exclude taking a frontrunner role in environmental policy. Let me givean example: Germany, as one of the world's leading economic powers, has a 31% share of nuclear power. Despite this, we have decided on a regulated phase-out of nuclear power. In nine years time, half of all nuclear power plants are to be taken off the grid, and the remaining plants by 2020. At the same time we have started to expand the use of renewable energies and have elaborated an ambitious climate protection programme in the construction and transport sector. We have committed ourselves to a 21% reduction in emissions of the six major greenhouse gases by 2008/2012. We have already achieved an 18.5% reduction. Our energy and climate protection policy is a success at national level.

It is for this reason that we were successful in enforcing our wish in the negotiations in Bonn that the construction of nuclear power plants in countries in the South will not be recognised as an offsetting measure within the Clean Development Mechanism.

At the international climate negotiations in Bonn and Marrakesh, one group of countries, namely the Europeans, took on a leading role and saw to it that the Kyoto Protocol can enter into force before the World Summit in Johannesburg. This will create a new reality in global environmental policy, with its own cause-effect and action processes. It will also force those that have thus far stood on the sidelines to follow this path. Climate protection policy is at the same time a policy of comprehensive modernisation comprising almost all areas of life. Whoever does not participate in this ecological modernisation misses out on the opportunity of modern efficiency technologies and new expanding markets for plants generating renewable energies. After ratification, there will be an economic incentive for all countries to participate.

The influence of the nation state can therefore be considerable: at the negotiations in Bonn, one party led the way for the others to follow. Almost like the domino effect in reverse. You can see, as a policy-maker it is difficult for me to give a fundamental answer to the question you have posed. The answer varies from case to case. At times, an innovative country may be held back by international regulations. On the other hand, at international level it is possible to establish facts and pressure on those lagging behind. It is an interplay, in which it will always be important that some individual nations take on a leading role. Not because of their position as a world power, but because of proven success in their own country. I would, for instance, welcome Swiss transport policy, which promotes rail travel, becoming an international standard.

Were we in Germany, however, to receive a specific recommendation to adopt the Swiss system within 15 years, the government would probably oppose this interference in its domestic policy. But at the Summit

in Johannesburg we want specific recommendations to be made, enabling Summit participants to put pressure on sovereign nations—undoubtedly for good reasons—to initiate or strengthen a certain policy. This approach should help, for example, to halve the number of people with no access to sufficient water by 2015.

The history of the 0.7% target approved in Rio speaks volumes. Or of the World Social Summit in Copenhagen: the decision was taken there that developing countries should assign 20% of their budget to satisfying basic needs—and industrialised countries should allocate 20% of their development aid for this purpose. That was a specific recommendation for action, however it was only partly successful in bringing about the desired prioritisation.

We have a difficult task ahead of us. Nevertheless, I am confident that we are capable, for example, of initiating a policy geared towards a decentralised energy supply and renewable energies. It may even be possible for us to agree on different yet feasible annual quotas for each country for increasing the share of renewable energies. That sounds a lot easier than it is. Whenever the national budget or well-organised major groups are concerned, there is a potential cause of conflict. Even within the EU, where the new direction in agricultural policy is an example.

Attempting to achieve this at a UN Conference is even more difficult as nation states have not given up their sovereignty to the UN, as is the case in the EU to a certain extent. Whether or not a global deal can be made will also depend on whether we succeed in creating a "spirit of Johannesburg" by September which guides and supports the diplomats, ministers and heads of state involved in the negotiations. We should also bring about changes at the global level itself. Our priority must be to ensure that global environmental institutions and environmental law are given much greater weight. Since we do not have a 'spare' planet earth at hand, WTO law must not have priority over environmental law.

Nowadays, the global economy puts trade interests ahead of everything—especially environmental protection, human rights and working standards. For this reason we need global rules to guarantee the conservation of our environment and respect of human dignity. National governments should therefore introduce a regulatory framework applicable to all, which educates international corporations in terms of environmental and social policy.

Nation states still have an essential role to play: traditionally they protect man and the environment from proprietary economic interests. However, in a global economy in which Monsanto, Microsoft and Wall Street are so much more powerful than any nation state, nation states alone can no longer ensure protection. The historic task of nation states today is therefore to introduce global environmental legislation that is more powerful than any nation state or any transnational corporation.

At the World Trade Conference in Doha, we succeeded in incorporating environmental issues into the forthcoming round of world trade talks. The relationship between international environmental agreements and the WTO regime, the promotion of environmentally sound goods and services, the abolishment of environmentally harmful fishing subsidies, eco-labelling and biological diversity issues will be on the agenda.

Unfair trade regulations and high export subsidies for agriculture and textiles in industrial countries must also be finally addressed, as they cost the developing countries 2 billion dollars per day. As a matter of urgency the unfair protectionism of the industrialised countries must be overcome. Despite all the progress made in Doha, this issue has not really been addressed yet. Much will depend on who is willing to 'enter the ring' and fight for the environment. The German government strongly favours transforming UNEP into a global environmental organisation. We need a strong global environmental institution that can stand up to the WTO, the FAO and transnational corporations. We hope to reach a consensus on this matter in Johannesburg.

However, the protection of global goods requires more than strong institutions. It also requires additional funds. Protecting the climate, biodiversity and international water resources costs money, particularly in developing countries. For this reason, a global environmental institution should not be solely dependent on contributions from its member states. We should identify financial sources on the basis of the polluter-pays principle. Global goods are valuable, therefore they should not be used for free, as in air and maritime transport, for example. A price on these goods would reduce the level of use to a more tolerable one and would make global environmental institutions less dependent on contributions from nation states.

Good "Realpolitik" *needs* visions and ideals: otherwise we will not be able to do justice to the fragile state of our blue planet. Visions are also objectives providing orientation in a complex, interlinked world. A world which many find incomprehensible and irritating, where they receive more bad news about stock crashes and hurricanes than good news. Many people

see themselves living in a world which allows global discussions, but which in reality can no longer be influenced.

'Our future is in the hands of fate and power'. We will not survive the 21st century with such an attitude. The people of the 21st century must find their place in a global world. They must see that they themselves are an influencing force. This is often forgotten.

Over the next two decades we must succeed in enforcing a globally sustainable economy. This will scarcely be possible without global agreements that are binding under international law or without global institutions. Should we fail, the next 20 years could be the last years in which life on earth is about more than simply *surviving* for some of mankind.

One of the main problems, if not the main problem, is the fact that our awareness is very strongly defined at a national level. Let me givean example: the Green party would not win the next Bundestag election because it calls for the WTO to respect international environmental agreements and to make conserving the foundation of life on earth a priority. Not even a climate protection policy can win an election, as my party sadly discovered in 1990. Elections in Germany, as elsewhere, are fought on national issues, not on international finance policy, global poverty eradication, climate protection policy or other civil areas of international peacekeeping.

In other words: in the political arena we are one step behind globalisation. The fact is, we still have an individual and collective national identity—only few are already global citizens with a global identity. However, as nowadays not only every global player but also every consumer in the supermarket and every car-driver is a global actor, I feel it is imperative to develop a global awareness. If not we will fail because we will continue to be faced with the frustrating misunderstandings which can prove to be the downfall of conferences and major political projects such as the climate protection process: any national politician wishing to reach an environmental agreement at international level is faced with a real problem should this agreement result in costs for a major group in his own country, or affect the country's position as a business and industry location.

So long as national dialogue lags behind the needs of the present, international environmental policy stands little chance. The simple truth is that politicians want to be re-elected. We therefore need voters with a global awareness, for whom sustainability and the future of this planet is more important than current national politics.

In my opinion, discussion of global governance is too often distanced from the citizens of this world. But politics cannot work without citizen participation. And in a democracy, it is always the citizen who is the sovereign. Global environmental governance needs a solid basis: citizens with environmental awareness and commitment. Citizens with long-term thinking.

So how can we define the role of the nation state in times of ecological and economic globalisation? Zarathustra said, "I love him who scatters golden words in advance of his deeds and always does more than he promises. For he seeks his own down-going." This would be my answer to your question: Nation states must recognise that their importance as a source of national identity is coming to an end. They must even advance this on-going process constructively in order to save our planet. In the future we will need people who think globally and people with a sense of global responsibility. The core interest is survival and prosperity for all people on earth. The strategy: sustainable economic practice across the globe. For this reason, global environmental regimes and active regions must be allowed greater influence.

It was very important for me as a policy-maker to take this opportunity to outline my scope of action. Developing a sustainable global economy is crucial. But at the same time, it is probably the greatest political challenge that mankind has ever taken on. And we are only just beginning.

Part I

The Influence of International Institutions on Nation States: Theoretical Outlines and Country Studies

Of Course International Institutions Matter: But When and How?

by Ronald B. Mitchell[*]

Research over the last decade by scholars of international relations and comparative politics has clearly demonstrated that international environmental institutions can produce quite dramatic changes in the behaviour of the states and non-state actors that they seek to influence. Taken as a whole, that body of research has also demonstrated several other important points. First, it has shown that determining whether observed changes in behaviour were driven by the institution or by other, exogenous, factors is not a trivial problem. Second, it has shown that although there are many international environmental institutions that have been quite effective, others have wielded little if any influence. Third, it has begun to identify features of international environmental institutions that promote effectiveness and features that tend to undercut it. Fourth, it has also begun to show how effectiveness depends not only on the features of the international environmental institution but also on features of the problem being addressed, the broader international context, and the countries whose behaviour the international environmental institution seeks to influence. The research conducted to date has also demonstrated that international environmental institutions wield influence both through rationalist mechanisms in which states engage in self-conscious processes of identifying and responding to material incentives and through constructivist mechanisms in which norms, identities and ideas play far more important roles than interests and power. One question that has yet to receive attention is how international environmental institutions compare to other social efforts in their ability to induce positive environmental change, including through state policies outside of the realm of international environmental institution, through private corporate regimes, through the activities of non-governmental organisations and civil society more generally, and through epistemic communities.

Of course international environmental institutions "matter"

During the late 1980s and early 1990s, scholars working on international environmental politics spent considerable time and effort engaging in the realist-institutionalist debate over whether institutions matter. The issue at the time was whether international environmental institutions, or "regimes," defined as "norms, principles, rules, and decision-making procedures around which actors expectations converged" ever influenced state behaviour (Krasner 1983, 1). Considerable theoretical and empirical research at the time focused on evaluating whether (or demonstrating that) international environmental institutions influenced behaviour at least in some instances. Early in the 1990s, several scholars developed case studies clearly demonstrating states and substate actors taking actions that could not be explained by reference to their pre-institutional power and interests (Haas 1989; Haas, Keohane, and Levy 1993; Mitchell 1994b). These efforts soon developed into a research programme focused initially on explaining compliance with international law which then developed further into what has come to be known as regime or institutional effectiveness research (Keohane and Levy 1996; Hasenclever, Mayer, and Rittberger 1997; Brown Weiss and Jacobson 1998; Victor, Raustiala, and Skolnikoff 1998).

Scholars working within this research programme have produced an array of studies demonstrating that international institutions sometimes lead states and non-state actors to reduce their harmful behaviour; that sometimes these reductions lead, in turn, to improvements in environmental quality, and, in rare cases, to the elimination of the original problem; that sometimes such institutions can also exacerbate environmental problems; and that, not surprisingly, sometimes they have no influence at all.

Careful studies of the Mediterranean Action Plan, the Convention on Long-Range Transboundary Air Pollution (LRTAP), the Montreal Protocol on stratospheric ozone depletion, and oil regulations under marine pollution treaties have shown both that international environmental institutions have influenced state behaviour and have provided considerable insight into the mechanisms by which they do so (Haas 1990; Levy 1993; Haas 1992; Parson 1993; Parson and Greene 1995; Mitchell 1994a). Other studies have highlighted cases where international environmental institutions made little, if any, difference in state behaviour or even exacerbated the problems they were seeking to remedy, including treaties addressing whaling, many fisheries, whaling, tropical timber, and

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the Rhine river (Peterson 1992; Andresen 1997; Peterson 1993; Wilder 1995; Bernauer and Moser 1996). Many of these, and other, studies have produced more nuanced findings demonstrating that international environmental institutions that influence the behaviour of some set of states may have little influence on others, as evident in the Convention on International Trade in Endangered Species ivory ban, or may initially have little influence but become more influential later in time, as evident in the international wetlands convention (Brown Weiss and Jacobson 1998; Victor, Raustiala and Skolnikoff 1998; Mofson 1996; Matthews 1993). As several commentators have noted, however, the field is plagued by the problem of selection bias, with only a small and undoubtedly unsystematic sampling of the international environmental institutions that exist having been evaluated (Downs, Rocke, and Barsoom 1996). For most of the more than 500 multilateral environmental legal instruments currently in existence, we simply have no evidence or analyses relevant to the question of whether they were influential or not.

Do international environmental institutions matter and how would we know?

Before engaging the question of whether international environmental institutions "matter," we must clarify what we mean when we ask whether a regime "mattered?" That is, we must define what we mean when we say a regime is effective or influential. In the environmental realm, most scholars have thought of regime effectiveness in terms of how outputs of interest are different than they would have been had the institution not existed. At the institutional level of analysis, research in this tradition attempts to determine whether and in what ways behaviour and/or environmental quality are different than they would have been had the institution not existed. At the state level of analysis, the same question can be framed in terms of how a state whose behaviour is regulated by a regime or institution would behave differently if this behaviour were not regulated, either because it was not a member of the regime or because the regime did not regulate that behaviour. The ultimate objective is to determine whether the energies of the state are directed differently in the presence of the treaty, regime, or institution than they would be otherwise. Initial tendencies to frame questions in terms of regime compliance have more recently been rejected in favour of thinking in terms of regime effectiveness as theoretical logic and empirical evidence demonstrated that compliance was neither necessary nor sufficient for effectiveness. Compliance was not necessary since a demanding treaty might induce considerable behavioural change (and even environmental improvement) even as the behaviour fell short of the legal requirements of compliance. Compliance was not sufficient since a non-demanding treaty (at the extreme, one which merely codified existing behaviours) might be marked by high levels of compliance that resulted from few if any changes in behaviour (and produced no environmental improvement). Much, though not all, research to date on international environmental institutional effectiveness has focused on the influence of regulatory regimes. Young has noted that regimes are not always regulatory, but can also be procedural (facilitating recurring collective choice), programmatic (facilitating the pooling of resources toward collective goals), or generative (helping develop new norms and social practices) (Young 1999b, 24ff; Young 1998a, 145).

Effectiveness should be distinguished from performance as well as compliance. The performance of an environmental treaty can be thought of as some measurement of the behaviours or environmental quality (the "outputs") observed under a treaty. Effectiveness, by contrast, is better thought of as performance relative to some baseline. The question, of course, is what baseline. Although using different terms, recent scholarship has suggested that effectiveness can be evaluated along two different scales and, in both cases, against two different standards. Effectiveness can be evaluated along scales that measure either changes in the behaviour being regulated or changes in the environmental indicator that is the ultimate concern of the institution. As one might expect, which of these scales is used has important analytic as well as political effects. Making progress in terms of environmental quality often proves more difficult than making progress in terms of behaviour, if only because behavioural change in any given arena is necessary but not sufficient for environmental quality change. Even perfectly successful efforts to alter a given behaviour may not produce corresponding environmental improvements if the environmental degradation at issue, as with many types of environmental degradation, results from a suite of human behaviours rather than simply from one.

Besides distinguishing among scales of effectiveness, we also must distinguish among standards of effectiveness. The two major standards currently being used by scholars are those involving counterfactuals and goal achievement. That is, regardless of the scale being used, one can evaluate progress relative to what would have happened otherwise, asking "how much did the institution contribute to making things better, whether behaviourally or environmentally?" or rela-

tive to the intended goal, asking "how much did the institution contribute to achieving the objectives that motivated its creation?" (Young 1998b; Young 1999a).

No small fraction of the debate over the influence and effectiveness of international environmental institutions arises from the simultaneous and often implicit use of very different definitions. Many environmentalists, concerned with motivating institutional progress, focus on how far short most environmental institutions fall from the environmental quality goals established in international agreements, let alone those held by the environmentalists themselves. Not surprisingly, many negotiators and diplomats, concerned with both justifying the existence of such institutions and looking for ways to improve them, focus on how much progress many international environmental institutions make in inducing behaviours that would not have occurred absent the institution.

The preceding discussion makes clear that any attempt to evaluate effectiveness must identify ways of convincingly identifying appropriate and plausible counterfactuals. Any claim that an institution was effective, whether in terms of behaviour or environmental quality and in terms of the goal or some prior baseline, implies that, absent the institution, outcomes would have been different. Creating convincing counterfactuals is certainly easier when seeking to evaluate behaviour rather than environmental quality, simply because the number of non-regime influences on behavioural change, however large, is always smaller than the number of non-human influences on environmental quality. Put differently, even a fully complete model that could exactly predict aggregate human behaviours based on the influence of international environmental institutions and all other factors (an obviously unachievable model) would still be incapable of predicting environmental quality without adding yet more factors into the model, including in most cases a large stochastic component.

Despite the standard set of obstacles to creating convincing counterfactuals, environmental problems provide some interesting options for doing so (Fearon 1991; Biersteker 1993; Tetlock and Belkin 1996; Sylvan and Majeski 1998). We can estimate what a state that was a member of a regulatory treaty would have done otherwise (and hence estimate the effect of the treaty on that state's behaviour) by examining a) the behaviour of that state prior to the treaty's entry into force for that country, b) similar behaviours of that state in areas not regulated by the treaty, and c) the behaviour of states who were not party to the treaty after its entry into force. Since we cannot observe the true counterfactual situation (in what is known as the "fundamental problem of causal inference"), examining these and related observable phenomena provide us with some basis for making educated guesses or informed conjectures about what the member state would have done had it not been a member (King, Keohane, and Verba 1994).

What makes international environmental institutions matter and when?

Evidence demonstrating that some international environmental institutions matter and others do not poses the questions of what explains this variance across international environmental institutions. Four potential categories of factors exist. First, negotiators and others concerned with international environmental policy certainly hope that at least some of the variance in effectiveness is due to intentional differences in the institutional design features. That is, differences in the institutions themselves explain the differences in their effectiveness. That need not be the case, however. Work to date suggests three additional categories of factors that, at least potentially, explain the variation in the effectiveness of different international environmental institutions. These additional categories of influence, describe below, include features of the problem, features of the broader international context, and features of the countries whose behaviour the international environmental institution seeks to influence.

These latter three sets of factors may produce variation in performance or in effectiveness. That is, they may lead to differences in outcomes in which institutional features play no part. However, it may also be the case that these factors are "permissive" or conditioning causes of influence, with an international environmental institution having influence on states when these variables have certain values and that same international environmental institution having no influence when these variables have other values.

What makes international environmental institutions matter? Institutional features

Scholars have identified a range of features of an international environmental institution that, at least in some cases, appear to determine whether an international environmental institution is influential or not. The rules of the regime, both on paper and in use, certainly may play a part in their influence. These rules can be categorised as the international environmental institution's primary rule system, the informa-

tion system, and the response system (Mitchell 1996). The primary rule system consists of the rules that delineate the behavioural requirements of the regime. The influence of an international environmental institution has been posited as depending on the ambitiousness or "depth" of these rules, whether they consist of negative proscriptions or positive prescriptions, whether they were adopted by a legitimate processes, and a range of other features (Downs, Rocke and Barsoom 1996; Princen 1996; Franck 1990; Brown Weiss and Jacobson 1998). An international environmental institution's information system also may determine its ability to alter behaviour. The transparency of the regime and the design of systems for implementation review as well as rules for improving both scientific knowledge of the problem and technical understanding of possible solutions can all have significant impacts on an international environmental institution's effectiveness (Victor, Raustiala and Skolnikoff 1998; Mitchell 1998). The effectiveness of international environmental institutions does not depend solely on whether these systems identify violations or compliance, or more broadly identify behaviours that either support or undercut the goals of international environmental institutions, without such identification also leading to some form of response, however diffuse and non-material. An international environmental institution's response system can be based in the traditional distinction between sanctions and rewards but much research has also noted the important role that capacity-building, violation prevention, labelling and information exchange, and norm generation can play in leading states to adopt new behaviours (Downs, Rocke and Barsoom 1996; Chayes, Chayes, and Mitchell 1995; Haas, Keohane and Levy 1993; Mitchell 1994b; Clapp 1994; Parker 1997).

Besides these elements of, or directly related to, the behavioural requirements of the international environmental institution, several other features may also prove influential. Membership rules certainly seem likely to be important determinants of the influence of international environmental institutions, although at a theoretical level it remains unclear whether a regime consisting of a smaller but more committed set of states is likely to prove more or less effective (in terms of aggregate behavioural change or environmental improvement) than one with a more universal membership but less aggressive primary rules (Koremenos, Lipson, and Snidal 2001). Likewise, and especially in terms of long run dynamic effectiveness or robustness, an international environmental institution's ability to responsively revise primary rules, information systems, and response systems as things change can be important with some interest in whether arrangements involving frameworks and protocols prove more effective than those that require amendment (Young 1998b). Of course, the resources that the international environmental institution itself and the member states—as well as supporting nongovernmental organisations (NGOs) and multinational corporations—bring to bear in attempting to implement an international environmental institution's provisions will be crucial to converting requirements that may look good on paper into reality.

When do international environmental institutions matter?

Beyond such institutional features, the performance and effectiveness of international environmental institutions depend on features of the problem, the context, and the countries that are their members.

PROBLEM FEATURES

The attempt of international environmental institutions to remedy a range of environmental problems that do not all share the same characteristics. Recent scholarship has suggested that problems vary in several important ways that influence the ease or difficulty with which they can be remedied (Rittberger and Zürn 1991; Young 1999a; Miles et al. 2001). Thus, environmental problems involving coordination problems have far fewer concerns regarding non-compliance than those involving collaboration or Tragedy of the Commons type problems, which in turn face an easier, if not easy, task than those involving upstream/downstream problems or asymmetric externalities (Stein 1983; Mitchell and Keilbach 2001). The distribution of power among states and the corresponding distribution of interests that states perceive themselves as having in remedying, or ignoring the problem are also important determinants of the ease of remedy. Interests can include both visible and material concerns as well as less obvious but nonetheless potent concerns with underlying values and identities.

Problems may pose greater or lesser challenges to an international environmental institution due to variation in how many actors are causing the problem and in how susceptible those actors are to regulation. Thus, the more concentrated the actors who must be regulated, the easier the process of monitoring their behaviour as evident in the regulation of the relatively few producers of chlorofluorocarbons rather than the myriad consumers under the Montreal Protocol. The activity causing the environmental problem may also

be more or less susceptible to monitoring. Thus, destruction of a wetland or other habitat leaves long lasting traces that often can be readily linked to their perpetrators whereas marine or river pollution often is difficult to observe and even more difficult to link back to the perpetrators. Problems vary considerably in how embedded they are in the social, economic, and political structures of the societies that perpetrate them, as well. Thus, to give one example, reducing the use of fossil fuel use to mitigate climate change under the Framework Convention on Climate Change is likely to prove a far more difficult problem than did reducing the use of chlorofluorocarbons under the Montreal Protocol. The extent of scientific knowledge about the problem is also likely to prove influential in how readily states respond to the demands of international environmental institution, and this knowledge as well as technical knowledge about solutions is likely to be a function not only of the institution itself (as noted above) but also exogenous factors that may well be not influencable.

CONTEXT FEATURES

The international context also will condition the ease or difficulty an international environmental institution will have in inducing behavioural change among member states. The level of economic interdependence among member states, whether in the extensiveness of trade relations or the existence of regional economic integration groups like the European Union, seems likely to influence the ease of inducing environmental change as does the level of institutional interdependence, such as that captured by the increasing degree of overlap of membership in a broad array of international environmental institutions. In both cases, these interdependencies are likely to give states a sense, whether accurate or not, that their behaviour within a given international environmental institution will influence the cooperativeness of other states in other realms that may be of more importance while simultaneously allowing states who seek to induce environmental co-operation more mechanisms for rewarding or punishing others in their attempt to do so.

The general level of environmental concern in civil society is likely to play an important background role in the responsiveness to international environmental institutions as well. Increases in the general level of environmental awareness and concern may help a wide range of environmental regimes become more effective. Equally important, variation in concern across environmental problems and over time can help explain variation in the effectiveness of corresponding international environmental institutions. Governments are likely to be more responsive to international environmental institutions addressing problems that have higher levels of salience with their publics. Likewise, the effectiveness of an international environmental institution is likely to ebb and flow in tandem with the ebb and flow in the salience of a given problem due to educational efforts by NGOs and the media. Broader themes running through international relations may also influence the willingness of states to fulfil their environmental commitments. Evidence suggests that the Soviet Union was more willing to co-operate under the Convention on Long-Range Transboundary Air Pollution because of concerns related to détente than they would have been otherwise, and the end of the Cold War seems likely to have facilitated co-operation among states that previously were on different sides of the previous East-West divide (Levy 1993). Likewise, the dramatic changes relating to terrorism in 2001 are likely to have significant, if difficult to predict, influences on the effectiveness of international environmental institutions.

COUNTRY CHARACTERISTICS

The influence of an international environmental institution varies across member states as well as across international environmental institutions. To explain these variations, it is necessary to also look at the country level characteristics that influence whether states fulfil their environmental commitments. One of the earliest set of factors identified as crucial in explaining differentials in environmental responsiveness are those related to state capacity. The financial, technical, and administrative capacity of states to fulfil their obligations under various international environmental institutions and to induce substate national actors to make required behavioural changes varies considerably. Much non-compliance with the requirements of an international environmental institution can be attributed to the inability to comply as well as the desire to violate (Haas, Keohane and Levy 1993; Chayes and Chayes 1995; Brown Weiss and Jacobson 1998). The economic, political, and social structures of states also vary widely and alter how responsive governments are to the views of their publics and how responsive their publics are to the policies of their governments.

States vary in the general level of environmental concern as well as in the relative importance given to particular environmental issues. Developed states have a quite different set of environmental concerns than developing states, and it is not surprising to see the former states taking much more concerted action to fulfil the requirements of international environ-

mental institutions that, not surprisingly, reflect their environmental interests more than the environmental interests of developing states. States vary considerably in the number of NGOs, multinational corporations, elites, and publics and in how much influence these various groups wield both in the development and implementation of policy. There are considerable differentials in both the ability and desire of states to take leadership roles in the international community, and in the roles states see themselves playing in that community, as evident in the frequent efforts by Scandinavian states to take strong environmental positions earlier than other states (Levy 1993). Leadership also plays an important role at the domestic level, as the willingness of states to respond to international environmental requirements may change when leaders less committed to environmental action replace those more committed to such actions as evident in the changes in US climate policy during the 1990s. Finally, the level of knowledge and expertise on any given problem, and in particular the level of indigenous knowledge and expertise, varies considerably across countries and is also likely to influence both how willing and able states are to alter those behaviours that influence environmental quality.

How do international environmental institutions matter? The mechanisms of influence

Identifying the factors that determine whether and when an international environmental institution is effective entrains the additional question of how those factors influence behaviour. In line with the recent debate in international relations more generally, we can think of the mechanisms by which international environmental institutions influence behaviour as breaking into rationalist and constructivist categories (March and Olsen 1998; Young 1999a).

RATIONALIST MECHANISMS

One strain of thinking is that international environmental institutions influence behaviour through a "logic of consequences" in which states alter their behaviour in response to changes in the way in which they calculate what behaviours are in their best interests. In this model, international environmental institutions alter behaviour by providing essentially instrumental changes to the world in which states make decisions, tilting the incentives and opportunities they have to engage in the behaviours the international environmental institution seeks to promote. International environmental institutions can help states overcome collective action problems by altering a variety of the elements of that decision context in which states operate. They can help initiate and sustain a focus on certain environmental problems (and away from others) in a process of agenda setting. They also can increase certain behaviours simply by creating standards (with little if any enforcement), where the standards simply categorise behaviours as desirable or undesirable ("green" or "brown") which provides the foundation for concerns about, and perhaps the reality of, shaming states who do not engage in the behaviours required or encouraged by the international environmental institution.

Obviously, international environmental institutions also can operate much more instrumentally and directly, however. International environmental institutions can incorporate sanctions against states that fail to fulfil their requirements or offer rewards to those that do so. Thus, the Montreal Protocol threatens sanctions for developed states that fail to reduce CFCs according to the targets and timetables laid out while offering assistance as an incentive to developing states that expect to have difficulty in that regard. Both the Rhine river regime and a 1911 fur seal arrangement had provisions offering side-payments to states to encourage them to adopt behaviours they would not otherwise have adopted. Besides sanctions and rewards, international environmental institutions can seek to increase the capacity of member states to fulfil their commitments or reduce their opportunities to violate their commitments. Capacity-building measures have become an increasingly common element in international environmental institutions that include developing states who may lack the financial or technical ability to comply with their provisions. Although not frequently observed, as environmental concern increases one might expect provisions imposing controls on the export of certain pollutants to states that lack the indigenous capacity to produce them as a way of reducing the ability of those states to pollute. Several recent international environmental institutions have adopted strategies based on simply increasing the flow of information through prior informed consent procedures that assume that states are engaging in behaviours they themselves would not engage in if they were fully aware of the consequences of those behaviours (O'Neill 2000).

CONSTRUCTIVIST MECHANISMS OF INFLUENCE

Another strain of thinking is that international environmental institutions influence state behaviour through a "logic of appropriateness" in which state behaviour is explained as a function of the identities states adopt and the behaviours considered appropriate to those identities. In this model, the behaviours

of states results not from decisions about what is in the state's interest but rather from assessments of what identity the state seeks to promote or project and what is the behaviour appropriate to that identity. After initial assessments such as that, state behaviour also is likely to reflect the influence of the habit of compliance or conformance with treaty norms.

According to this view, international environmental institutions can induce behaviour change by promoting improvements in and diffusion of scientific and technical knowledge. Through the process of scientific investigation and assessment, not only do states identify and improve their understanding of their material interests but they also develop new identities and roles over time. The process by which scientists working on behalf of a government to understand the environmental impacts of human behaviour is likely not only to increase their understanding of those impacts but is also likely to influence their commitment to both environmental goals and international pursuit of those goals. These processes have been identified in both the scientific developments surrounding the Mediterranean Action Plan and LRTAP (Haas 1990; Levy 1993). International environmental institutions also can promote new norms and alter the discourse and rhetoric that surround an environmental issue making it more difficult (though surely not impossible) to sustain arguments that economic or security interests should take precedence over environmental ones (Litfin 1998). At an even broader level, international environmental institutions may facilitate behavioural change and environmental problem through a diffuse but nonetheless important process of dynamic social learning in which the ability to manage environmental problems collectively improves over time (Social Learning Group 2001).

How much do international environmental institutions matter?

Arguing that international environmental institutions matter does not imply anything about how much they matter relative to alternative ways of inducing behavioural change and environmental improvement. Comparisons across different approaches to inducing such changes have not yet been seriously engaged by the research community investigating international environmental politics. However, that community as a whole has identified an interesting array of efforts to induce such changes.

Certainly, state policies and behaviours that do not include international environmental institutions have a broad range of influences on environmental behaviour. Potentially one of the biggest influences of states on the environment lies in the unintended, but nonetheless large, effects of the processes of technological development and economic globalisation. These processes often do not involve intergovernmental co-ordination and their environmental impacts are often not considered but they still have major environmental impacts. Although these are often assumed to be negative, increasing evidence shows that a race to the top may be as, or more, common as a race to the bottom. Of course, explicit co-ordination of economic policies is increasingly common at both the global level within the World Trade Organisation and at the regional level within the European Union, the North American Free Trade area, and other regional trade arrangements. Increasingly, these intergovernmental economic efforts are choosing or being forced to include environmental considerations in their policies. Important environmental impacts also result from the often organic process of policy diffusion by which the national environmental policies of one country are imitated by other countries that view those policies as effective ways to deal with environmental problems that have large negative domestic influences.

Non-corporate actors in civil society have been playing active roles in influencing environmental behaviour globally. NGOs have devised a wide range of programmes designed to reduce human impacts on the environment. From shaming corporations engaged in environmental harmful behaviour to promoting eco-tourism to devising a variety of eco-labels to facilitating debt-for-nature swaps, environmental NGOs have adopted numerous strategies the effectiveness of which have yet to be evaluated relative to international environmental institutions. Alongside these specific efforts are the broader and more diffuse influence of transnational environmental movements that shape the identities, interests, and behaviour of citizens throughout the world (Princen and Finger 1994; Wapner 1996). Scientists engaged in global environmental assessments and in epistemic communities also wield significant influence over the behaviour of states and the private and public citizens that compose states in ways that may be much more far-reaching and fundamental than international environmental institutions.

Private actors operating at both the domestic and international level also appear to be having important influences on the type and extent of environmentally harmful behaviours. Economic and political forces are increasingly leading many multinational corporations to view it as in their best interests to alter their business practices in ways that have environmental benefits, regardless of what competing corporations

are doing. In other cases, they are co-ordinating their behaviour through private regimes such as the International Standards Organisation (ISO) in ways that may well alter corporate behaviours far more than do corresponding intergovernmental efforts. Multinationals also have begun co-ordinating such efforts with nongovernmental organisations, as evident in the efforts of the Forestry Stewardship Council to serve as an independent auditor of logging industry practices (Dudley, Elliott, and Stolton 1997). In all these cases, whether involving state, nongovernmental, or private actors, important questions remain about both how effective these various efforts are individually, how effective they are in the aggregate, and how they compare to international environmental institutions both in their effectiveness and in the conditions that influence such effectiveness.

Other considerations

This discussion has focused on the effectiveness of international environmental institutions defined in terms of their influence on behaviour and environmental quality. Before concluding, it is worth mentioning that there are several aspects of the effectiveness of an international environmental institution that have not been discussed here as well as several effects of international environmental institutions that are not captured in the relatively limited sense of effectiveness that has been used here.

The preceding discussion has conceptualised effectiveness in a relatively static sense of comparing each international environmental institution relative to some counterfactual state of affairs. Yet, the effectiveness of an international environmental institution can be as readily, and perhaps more appropriately, judged in a more dynamic as well as relative sense. The effectiveness of an international environmental institution is likely to depend in no small measure on where it stands in its "lifecycle." Although work has only just begun in this arena, we might well expect international environmental institutions to exhibit a particular temporal profile in which international environmental institutions have low levels of effectiveness initially, become increasingly effective over time as both the international environmental institutions themselves and their member states learn necessary skills, and decrease in effectiveness after passing some point of maturity. Whether following this or some other trajectory, it seems unlikely that we can make an assessment of an international environmental institution at one point in its likely that is equally valid for all other points in that lifecycle. We might also be interested in the effectiveness of a regime conceptualised in terms of its ability to respond to exogenous changes in the problem being addressed, or what has been called regime "robustness" and flexibility (Young 1999a). This might include the ability of the international environmental institution itself to engage in both simple forms of learning (finding new ways to achieve existing ends) and complex learning (pursuing new ends) (Social Learning Group 2001).

Another important aspect of effectiveness that is only now beginning to engage significant scholarly attention is the relative effectiveness of different international environmental institutions. Assessing relative effectiveness involves attempting to compare whether one international environmental institution is more effective than another in similar circumstances. This raises not insignificant problems of identifying metrics that allow meaningful comparison of international environmental institutions that address different environmental problems changes in which are not readily or even obviously comparable. Scholars are, however, increasingly recognising that for research on effectiveness to be policy relevant it must provide guidance to negotiators regarding which of the available design options is likely to be most effective in addressing a given problem in particular circumstances (Helm and Sprinz 1999; Sprinz and Helm 1999; Miles et al. 2001).

It is also worth noting that international environmental institutions have a wide range of effects that go well beyond the central and intended effects on regulated behaviours and environmental quality (Young 1999a). Scholarship has yet to engage questions of how the efforts of international environmental institutions measure up in terms of their efficiency in the use of resources to induce such behavioural changes. The costs incurred in developing and implementing an international environmental institution are rarely discussed let alone carefully evaluated. Even more rare are efforts to identify and quantify economically the benefits that derive from an international environmental institution. Obviously both these tasks are difficult both theoretically and empirically. Yet they would be necessary elements to any effort to determine whether international environmental institutions are efficient or cost-effective. Nor have scholars begun to seriously examine how the efforts of international environmental institutions to improve environmental quality influence levels of economic equity around the world or have other secondary (i.e., non-intended), but nonetheless important, effects in the world of international politics.

Conclusion

International environmental institutions can influence the behaviour of states and the quality of the environment that their behaviours, in turn, influence. Of course, not surprisingly, not all international environmental institutions realise their potential to wield influence. At times this reflects poor institutional design, while at other times it reflects the influence of a range of factors that would make it difficult for an international environmental institution of any design to alter existing behavioural patterns. In short, international environmental institutions matter sometimes. The foregoing has not delineated a fully integrated model of factors that determine the effectiveness of an international environmental institution, but has provided a list of the factors that previous scholarship has delineated as important to research on these and related issues. Much research remains to be done before we will have a full understanding of why some international environmental institutions work so well and others work so poorly. Making progress in that effort will require theoretical efforts to devise compelling, comprehensive, and integrative models of how international environmental institutions influence behaviour; methodological efforts to complement the large set of qualitative case studies that have already been conducted with quantitative methods that engage questions of relative effectiveness and look for patterns that can only be perceived by looking across international environmental institutions; and substantive efforts to examine the large share of over 500 multilateral environmental agreements that have not yet received any scholarly attention. Pursuing those efforts in the years ahead may allow scholars interested in international environmental politics to provide the policy relevant research necessary to guide negotiators in improving existing international environmental policy and devising new international environmental policies to address the range of environmental problems we are likely to encounter in the decades ahead.

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Intellectual Property and Environment: Impacts of the TRIPS Agreement on Environmental Law Making in India

by Philippe Cullet[*]

Environmental law in India has steadily grown over the past several decades (Thakur 1997). Generally, Indian environmental law can be described as the product of both national and international influences. India, like a number of other developing countries has been significantly influenced by the development of international environmental law (Anderson 1998). A significant difference with most other developing countries is, however, the existence of a strong local environmental movement (Gadgil and Guha 1993).

While Indian environmental law has always had strong links with international law in the field of the environment, the adoption of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS 1994) has brought about momentous changes in environmental law and policy making at the national level. TRIPS does not directly entail changes in domestic environmental laws but it imposes significant changes in the existing intellectual property rights regime. From an environmental perspective, some of the salient points are the requirement for partial patentability of life forms and for a form of protection of plant varieties (TRIPS 1994, Article 27.3).

The implementation of TRIPS obligations by India has been a long and arduous process which is yet to be completed. Two main pieces of environment-related legislation have been introduced as a direct consequence of TRIPS obligations. These are a new act to provide a form of plant variety protection (Plant Variety Act 2001) and a set of amendments to the 1970 Patents Act (Patents Amendment Bill 1999). Further, the Biodiversity Bill is also influenced to a large extent by developments in the international intellectual property rights regime (Biodiversity Bill 2000).

This article analyses some of the salient aspects of the relation between the international intellectual property rights regime and the evolving domestic law and policy framework. The first section gives an overview of the relevant international law framework. The second section examines India's existing and proposed legal framework. Finally, the last section analyses some elements that come out of the Indian experience in this field.

Environment and intellectual property: Relevant international legal framework

Dozens of environmental and intellectual property right treaties are directly or indirectly relevant in the development of national legal frameworks for the management of the environment. This article focuses on TRIPS and the Convention on Biological Diversity (CBD 1992), two of the direct sources of inspiration for recent legislative changes in India.

THE TRIPS AGREEMENT

TRIPS is not directly concerned with environmental management. However, the intellectual property rights standards that it sets have wide-ranging impacts for biodiversity management. First, TRIPS extends in principle patentability to all fields of technology (TRIPS 1994, Article 27.1). The agreement further specifies that micro-organisms must be patentable as well as non-biological and microbiological processes for the production of plants and animals. TRIPS also requires the introduction of specific intellectual property right protection over plant varieties (TRIPS 1994, Article 27.3.b).

TRIPS does not impose the patentability of all life forms since it allows states to exclude plants and animals and to provide an alternative protection mechanism for plant varieties. Further, states can exclude patentability where this is necessary to protect human, animal or plant life or health, or to avoid serious prejudice to the environment.

In effect, some of the most important changes that TRIPS imposes are in the field of agriculture where the introduction of privately held genetically modified seeds protected by intellectual property rights is likely to have sweeping impacts in all developing countries where agriculture remains an important contributor to the GDP and where a majority of the population finds employment in the primary sector.

Responses to TRIPS on the part of developing countries must be understood in the light of the institutional setting which characterises the agreement. The link with WTO ensures that TRIPS benefits from stringent enforcement procedures culminating in the

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availability of the WTO dispute settlement mechanism for adjudicating disputes. This constitutes today one of the most formidable enforcement tools at the disposal of an international organisation given that few states can afford to disregard the consequences of non-compliance with a WTO panel report.

THE BIODIVERSITY CONVENTION

The CBD provides a general framework for the management and conservation of biological resources. It is primarily an environmental treaty but it is also concerned with the economic valuation of biological resources. It further recognises the importance of intellectual property rights in biodiversity management and specifically calls on member states to 'ensure that such rights are supportive of and do not run counter to its objectives' (CBD 1992, Article 16.5). This probably constitutes the most explicit statement in international treaties concerning the relationship between environmental management and intellectual property rights.

The CBD is not an overarching treaty to which all other environmental treaties are subordinated. However, it provides a general legal framework for the sustainable management of all biological resources which is supplemented by pre- and post-1992 more specific instruments. Even though the CBD is not the equivalent of an 'environmental protection act' at the national level, it remains one of the most fundamental texts of current international environmental law. The response that states give to the CBD in terms of implementation must be understood in this context.

Proposed legal frameworks in India

As noted, among the series of legislative amendments required for TRIPS compliance, three are most relevant in the context of environmental management. The Patents Amendment Bill, the Plant Variety Act and the Biodiversity Bill all three are direct consequences of treaties signed by India.

THE BIODIVERSITY BILL

The proposed biodiversity legislation has been drafted following India's ratification of the CBD in 1994. However, if the bill's direct parentage is the CBD, it is also significantly informed by other considerations. In fact, the central aim of the biodiversity bill is to regulate access to biological resources in India. This is linked to several factors. First, while existing environmental laws deal with various aspects of the management of biological resources, property rights have not been a major focus of environmental laws. Second, there have been several intellectual property rights related controversies in the past decade concerning the appropriation of public domain knowledge through private intellectual property rights outside of India (e.g. US Patent 5,401,504). Third, TRIPS has brought patents on life forms within the purview of intellectual property rights. This new legal incentive coupled with the new opportunities provided by genetic engineering have ensured that the past few years have seen much more interest in the appropriation of biological resources and related knowledge from developing countries.

As a result of the different elements which inform the genesis of the bill, the text reflects the fact that the implementation of the CBD is undertaken in a context where TRIPS proposes the extension of patentability to several areas which were previously not included in intellectual property rights treaties. The bill thus tries to balance two different sets of principles. On the one hand, it focuses on India's sovereignty over its biological resources and uses this principle to restrict access for foreigners and to put control over access in the country in the hands of the government. On the other hand, in a bid to avoid a confrontation with WTO obligations in this field, the bill emphasises the role of intellectual property rights in regulating access and control over biological resources and related knowledge.

On the whole, the most striking element of the biodiversity bill is that in shaping India's response to the CBD and TRIPS, its guide to the relationship between sovereign rights and intellectual property rights does not seem to be Article 16 of the CBD which directs that intellectual property rights should be subordinated to the goals Convention but rather the fear of dispute settlement proceedings in the WTO.

THE PROTECTION OF PLANT VARIETIES AND FARMERS' RIGHTS ACT

The Plant Variety Act constitutes India's attempt at complying with its obligations under Article 27.3.b TRIPS concerning the protection of plant varieties. In this case, TRIPS has caused the adoption of a completely new piece of legislation since India, like many other developing countries had always rejected the private appropriation of plant varieties in a bid to foster research based on the sharing of existing knowledge. While the Plant Variety Act is directly linked to TRIPS and is therefore a piece of intellectual property right legislation, it is in practice as much an environmental act given the important impacts it will have for the management of biological resources in general and agriculture more specifically. It must therefore be analysed from both perspectives.

Plant variety protection within the TRIPS context is particularly interesting from the point of view of implementation in developing countries. This is due to the fact that plant variety protection is one of the few areas where TRIPS compulsorily requires some form of intellectual property right protection but does not impose patentability. Developing countries like India thus get a chance to devise a national implementation regime which suits their needs and conditions. The so-called *sui generis* option is what India decided to opt for. A number of factors have ensured that the *sui generis* regime chosen is itself heavily influenced by international norms. First, while India like most other developing countries had never introduced any form of intellectual property rights over plant varieties, a law had to be quickly drafted given the relatively short time frame for implementing this commitment. Second, a number of the developed countries that had already introduced plant variety protection were members of a treaty dealing specifically with plant variety protection. The International Convention for the Protection of New Varieties of Plants (UPOV 1961) thus provided a ready-made alternative to patents which was not going to be challenged for its incompatibility with TRIPS. Third, there was significant lobbying in favour of the adoption of UPOV as a *sui generis* regime by developing countries.

In the event, the act clearly reflects the various influences that informed its development. The first version of the bill introduced in Parliament in late 1999 was directly derived from the UPOV regime with some of the main clauses being copied word for word from UPOV. After significant redrafting over a period of 18 months, the bill was given a different tenor. While the first version of the bill focused like UPOV only on the rights of commercial plant breeders, the second version of the bill includes a chapter on farmers' rights and provides, for instance, that farmers are entitled, like commercial breeders, to apply to have a variety registered.

The drafting history of the act is significant. First, while the government's first draft only made a passing mention of farmers' rights (Plant Variety Bill 1999), significant lobbying ensured that the interests of a majority of the workforce in the country have been taken into account in the final version. Second, while farmers' rights have been fully incorporated in the bill, it is unlikely that they will be fully implemented. This is due to the fact that the criteria for registration are the same for breeders and farmers. Since the criteria for registration are those taken from UPOV, this implies that commercial breeders are likely to benefit from the provisions of the act but not farmers whose varieties do not normally meet the same technical criteria (Cullet 2001).

THE PATENTS AMENDMENT BILL

This third legislative amendment is much less directly related to the environment. However, it is relevant insofar as the introduction of patents on life forms will have impacts on environmental management. One of the most noticeable features of the Patents amendment bill is that it clearly seeks to avoid confrontation with TRIPS. On the one hand, the 1970 Patents Act had put exceptions to patentability to foster the fulfilment of basic needs such as food and health. These exceptions have not only proved appropriate from the point of view of basic needs but in the case of health have also provided the legal basis for the development of a strong generic pharmaceutical industry. On the other hand, TRIPS imposes patentability in all fields of technology and requires product and process patents. TRIPS requirements are thus quite different from the indigenous patents regime.

The rather incompatible national and international regimes would lead one to expect India to seek the most restrictive interpretation of TRIPS obligations to avoid unnecessary changes in its own satisfactory national patents regime. In the event, the bill strives to be as TRIPS compliant as possible. More surprisingly, it does not necessarily seek to use all the opportunities existing within the TRIPS context to limit the scope of patentability or the reach of patents. This is due in part to the fact that India has become extremely wary of the WTO dispute settlement mechanism after being one of the first countries to be targeted for its faulty implementation of one provision it should have implemented in 1995 (TRIPS US complaint 1997).

Impacts of TRIPS on environmental policy and law in India

The three recent legislative instruments examined show that the influence of international law has been predominant in each case. However, a major difference can be seen between the biodiversity bill and the other two. The CBD offers member states wide margins of appreciation in the way they want to implement its obligations. India has chosen to focus on the specific question of the regulation of access to biological resources and this falls within its prerogatives. TRIPS does not offer this kind of latitude and offers much more precise guidance concerning its implementation at the national level. In fact, TRIPS is even more significant. Even though the biodiversity bill is

a direct response to the CBD, it is also in large part a response to the international intellectual property rights regime.

Several points can be mentioned in this context. First, the introduction of product and process patents in new areas linked to environmental management are putting pressure on environmental law to provide appropriate responses to the private appropriation of knowledge related to biological resources even though these issues developed completely independently from environmental laws. Second, the biodiversity bill was drafted more or less independently from the patents and plant variety bills. Different ministries deal with different aspects of the problem and each is keen on not ceding ground to the others. The result is that there are significant overlaps and inconsistencies among the three instruments (Cullet 2001). Third, there is an unstated understanding that intellectual property related norms prevail over environmental norms. This is not related to substance but rather to the fact that there is very little enforcement of international environmental treaties whose obligations are often rather open-ended while intellectual property right norms are enforced through the binding dispute settlement mechanism of the WTO.

TRIPS is only one among many international treaties that India has ratified. All treaties must be implemented concurrently (Vienna Convention 1969), but in practice, a hierarchy is established at the level of implementation. Diverging from the international law framework provided in international environmental treaties is a matter of little consequence while the same is not true for WTO related instruments. This hierarchical approach to the implementation of international law is further carried over at the national level. The biodiversity bill illustrates this quite clearly in its treatment of access to resources. From an international perspective, it seeks to assert India's control over its biological resources to avoid in particular private appropriation in foreign jurisdictions. At the national level, the bill provides a framework which centralises power in the government. This contributes to the failure to recognise the property rights of local holders of biological resources and related knowledge.

There are also indirect ways in which TRIPS is influencing law-making. The rapid expansion of the scope of patentability at the international level has led to new possibilities to appropriate knowledge which used to be universally recognised as part of a common heritage belonging to everyone. The case of the turmeric and other US and European patents tremendously raised awareness in India concerning some of the consequences of the international intellectual property rights regime (e.g. US Patent 5,401,504). This directly explains why the biodiversity bill puts so much emphasis on India's right to control access to its biological resources. In itself, this reassertion of sovereign rights is not necessary. First, the delimitation of sovereign rights is something which can only be done through international treaties. A single country would not be able to impose its own view of sovereignty to other countries. Second, states' rights over their natural resources is not contested at the international level. The biodiversity bill clause is thus not of much significance in the broader context of international law. However, it must be understood as a direct response to the changes brought about by the international intellectual property rights regime. In other words, it is an acknowledgement that the reassertion of sovereign rights over natural resources is one of the few tools that states have at their disposal individually to try and stem the erosion of their sovereignty which the increasing scope of patentability fosters.

Lessons for the future

The influence of TRIPS over recent legislative activity is a fact. It is in part the simple prolongation of India's ratification of an international treaty necessitating legislative changes for full compliance. It assumes more significance because its impacts go far beyond the strict field of intellectual property. This is visible in two main ways highlighted above. First, some of the changes imposed by TRIPS directly impact on environmental management. Second, environmental laws are also directly or indirectly influenced by the ratification of TRIPS. The noteworthy aspect is that this is mostly a one-way route. Environmental law, domestic or international, hardly has any impacts on the development of the intellectual property rights regime despite a number of close links in practice.

It is interesting to put India's reaction to TRIPS in a broader context. First, there was significant resistance to the inclusion of intellectual property in the WTO context during the Uruguay Round negotiations. The government finally changed its mind and though the first set of changes required by TRIPS were rejected in Parliament to start with, there has been a progressive softening of the opposition at a political level. Second, the current government headed by the Bharatiya Janata Party (BJP) has been consistently pro-WTO since coming to power. However, this u-turn is not total. While the BJP is in favour of WTO, it still seeks to promote locally based indigenous development. The tension between these two unrelated objectives is partly responsible for the responses

offered to the global intellectual property rights regime. In effect, the proposed legislative frameworks attempt not to upset the global legal order while preserving the nation's interest. Given that these twin objectives are very difficult to realise, the secondary reaction is to try and concentrate more powers in the hands of the government at the national level while opening up new avenues for private sector development on other fronts.

One of the characteristics of TRIPS has been to be negotiated and ratified without widespread consultations within the country. This missing democratic debate has already had significant implications in terms of domestic law-making. Parliament first started by rejecting the first proposed amendment to the Patents Act only half a year after the government had signed TRIPS and committed the country to its implementation. More recently, the significant revision of the plant variety bill undertaken by the parliamentary committee indicates again a significant discrepancy between the perceived interests of the country in the government and in parliament. If environmental law is to be more responsive to local needs and interests, much more substantial debate has to occur, whether in the context of a strict binding agreement like TRIPS or in other contexts.

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Evaluation of Vertical and Horizontal Influences and their Impact on Environmental Change Policies in India: A Case Study of Two Sectors—Pollution Control and Water Shed Management

by Shoban Kumar Pattanayak and K. Lenin Babu***

With the United Nations convening the Conference on Human Environment way back in 1972, many nations have initiated efforts for proper management of the environment. Though developed countries have undertaken several measures to fulfil the international obligations, the results are not encouraging. This article examines the influences of various forces, both vertical and horizontal, on the natural resource management policies of the Government of India. Further, the article presents a comprehensive picture about the performance of various efforts that have been initiated as result of these forces.

A review of various legislative efforts by the Government of India with regard to natural resource management from 1947 till 1970 brings out the following features into light. The earlier legislation like The Sarais Act of 1867, Fairways Act, 1881, The Indian Fisheries Act, 1870, Indian Forest Act 1927, the Damodar Valley Corporation Act, 1948, The Rivers Boards Act, 1956, The Factories Act, 1948 were piecemeal and inadequate to combat environmental pollution as they had limited application and contained general provision for the control and prevention of water pollution. These laws could not prove efficacious against the spread of pollution that began to occur as a result of our rapidly growing population accompanied by increasing hazards of domestic and industrial needs. In the absence of proper legislation, the pollution related matters were generally dealt with under the purview of the tort law or Criminal Procedure Code. Different federal ministries dealt with various environmental considerations like sewage disposal, sanitation, and public health, and each pursued these objectives in the absence of a proper co-ordination system at federal level or the inter-governmental level.

However, 1972 marked a watershed in the history of environmental management in India. In Stockholm, the first United Nations Conference was held specifically to consider the global environmental condition. The participating nations were requested to submit a Country Report on the state of environment. Accordingly, a Committee on the Human Environment was set up to prepare the Country Report. In the Conference the then Prime Minister of India, Mrs. Gandhi said that

> on the one hand the rich look askance at our continuing poverty—on the other, they warn us against their own methods. We do not wish to impoverish the environment any further and yet we cannot for a moment forget the grim poverty of large number of people. Are not poverty and provide employment and purchasing power for the daily necessity of the tribal people and those who live in or around our jungle, we cannot prevent them from combing the forest for food and livelihood…

After participating in the Conference and expressing its commitment to the protection of natural resources, the Government of India enacted several legislations almost as knee-jerk reaction. The first such Act regarding the protection of natural resources was for protection of water. Water being a state subject, invoking Article 252 of the Indian Constitution, the federal Government enacted the Water (Prevention and Control of Pollution) Act (Water Act) in 1974. This was followed by the forty-second Constitutional Amendment in 1976, wherein protection of natural resources was inserted into the Directive Principles of Constitution, thus making India the first country to express its concern for natural resources in the Constitution. Thereafter, in 1981, the Government enacted the Air (Prevention and Control of Pollution) Act (Air Act) to deal with atmospheric pollution. The Preamble reads

> WHEREAS decisions were taken at the United Nations Conference on the Human Environment held in Stockholm in June, 1972, in which India participated, to take appropriate steps for the preservation of the natural resources of the earth which, among other things, include the preservation of the quality of air and control of air pollution.

The Bhopal accident in 1986 focussed attention on the shortcomings of the existing pollution control legislation. Further, it forced the Government to review and amend accordingly various legislations like the Factories and Boilers Act etc. In addition to strengthening of the Water Act and Air Act, the Government brought another umbrella legislation

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viz., Environmental Protection Act (EP Act). Its preamble reads;

> WHEREAS the decisions were taken at the United Nations Conference on the Human Environment held at Stockholm June, 1972, in which India participated, to take appropriate steps for the protection and improvement of human environment.

Though an elaborate machinery with various rules and regulations governing the polluting activities came in to existence in the post-Stockholm period, they continued to exist on paper due to inaction at the ground level. Their performance in the implementation of pollution control measures did not present a successful picture. The primary reason for this dismal picture can be attributed to the vertical influences, as they tended to be top-down model and stakeholders were not ready to accept the implications of legislation in terms of investing for pollution control technologies or machinery. Thus, the pressure from the negatively affected stakeholders—i.e. industries on policy makers resulted in intensive bargaining in between and as a result, the final legislation and implementation agencies were inherently weak to fulfil its founding objectives. Some of the shortcomings are listed below.

The pollution control legislation's, particularly Water Act, was introduced in the Parliament without much of ground work. There was criticism that the Water Act itself is nothing but a copy of an outdated Scottish law which itself was not in vogue in Scotland. Government adopted a "Command and Control approach" to regulate the pollution with standards being the yardstick.

As a result of the hasty establishment of Boards, they adopted the effluent standards prescribed by the Bureau of Indian Standards which were developed keeping the human health in mind rather than developing standards suitable from the point of ecosystem integrity.

The Water Act was the result of vertical influences and devoid of provision to involve community for achieving the founding objectives of restoration of water bodies and control of water pollution. The isolation of pollution control agencies in the earlier phases is to that extent that the protection of natural resources is the duty of just the boards and not even other line state agencies showed any interest in the protection of natural resources. Thus, the protection and prevention of natural resources has remained on the agenda of pollution control boards only.

Regarding the financial allocation to the boards, it was left to the respective State Governments "as they deem fit". In turn, State Governments were not keen to promote the agency which were considered as having anti-industry attitude. Most of the State Governments allocated very little financial revenues which was just sufficient to cover the wages only with the result of very little or no effective work by the Pollution Control Boards.

Members of Pollution Control Boards were to be nominated by the respective State Governments from various stakeholders like industries, trade etc. In principle, this would have provided an effective forum of participatory management for the pollution control boards to work in tandem with industries to develop a better model for the protection of the natural resources. However, looking back, it appears, that instead of developing a better model, the composition of the board has actually become a setback to its operation.

Further, to balance the pressure from stakeholders who might be negatively affected by the Boards, the Acts were further diluted by very minimal penalties which do not have any intrinsic deterrent value (Water Act, 71 Section 41(1). Whosoever fails to comply with any direction given ..., on conviction shall be punishable with imprisonment for a term which may extend to three months or with fine which may extend to ten thousand rupees or with both…). In a later day Act, EP Act, though severe penalties were prescribed, it was rendered useless by a rider clause (Environmental Protection Act, 86. Sec 24 Clause: (2): Where any act or omission constitutes an offence punishable under this Act and also under any other Act, then the Offender found guilty of such offence shall be liable to be punished under the other Act and not under this Act). Coupled with non-deterrent penal provisions, till the 1986 Amendment, the Boards were not given any powers to prosecute the violators. They had to invoke the judicial provision for prosecution. Further, the burden of proof was kept on the shoulders of the Board thus effectively keeping the Boards tied down.

Year	Cases under Water Act	Cases under Air Act	Total Cases	Cases pending	Ratio of pending to launched cases %	Cases withdrawn or dismissed	Water Act cases Total decisions	In Board's Favour
1987	1665	262	1927	1411	73	-	516	157
1988	2796	529	3325	2299	69	99	769	622
1989	2987	668	3655	2584	70	94	775	558
1990	3372	902	4274	758	64	150	1067	711
1991	4110	1064	5174	3336	64	180	1302	817
1992	4403	1132	5535	3447	62	208	1487	918

Table 1. Status of pollution related cases from 1987-92 (Source: CPCB)

The efficiency of the Boards can be gauged from Table 1 depicting the disposal of pollution related litigations by judiciary.[50]

The shortcomings were felt not only by the Boards but by other concerned agencies as well, but no efforts were made to correct them. It appeared if Government wanted the Boards to exist to proclaim the nation's commitment to the environmental protection with little or limited role in controlling the industrialisation. Moreover, the community was not involved in any manner. Thus, the pollution control in India remained the responsibility of one specialised agency only. Consequently, the deterioration of natural resources was too obvious. In a nutshell, one can draw the conclusion that actions based on the vertical influences generally failed to deliver the goods.

Horizontal influences on natural resource management in India

On the other hand, if we examine various developments in related sectors, the results present a contrasting picture. Here, the Forestry and watershed management are considered.

FORESTRY

Since ancient times, the forest sector was under the control of community in India. The community had to pay some revenue to the ruler on various services like timber, fuel-wood, grazing lands etc. Thus the community had right over the forests and its product. However, the hunting either of animals or birds was prohibited and used to lie with the king. The scenario rapidly changed with the colonial governments taking over governance. The Indian Forest Act of 1878, enabled the Government to take charge of the forests and categorised them in to three types—reserved forests, protected forests and village forests. This classification was on the basis of the growth of forest and sans any conservation aspects in it. With this move, the right of community on the forest has been turned in to privileges being given by the colonial government. Such change, indeed sparked many reactions—at times violent movements as well. The shift away from community management of forest led to many upheavals like the Birsa Munda's rebellion of 1890s, the Bastar rebellion of 1911, and the armed revolt led by Alluri Sitaram Raju in Gudem Rampa in 1919-22. Peasant nationalism in Kumaon and Garhwal began and ended with the question of forest rights. State take-over of forests thus appeared to be a gradual encroachment on community's rights to manage forest culminating in a final act of confiscation. The Forest department was unquestionably the most unpopular arm of the British Raj. With independence, the Government of India has adopted the same Act. State control and commercial exploitation of forest to provide raw materials for industries remained the operating motives of State policy in the first few decades of independence. The management of forest resources was the responsibility of specialised agency—Indian Forest Department with community having no role in the forest management.

This kind of management has given out several negative backlashes like adversarial relation between the community and forest department, forest department

[50] Please note that before 1987 there were minimum cases. The prosecution of polluters was effective only after Amendment in 1986 of shifting the burden of proof from Pollution Control Boards to the polluters.

unable to control the illegal activities like poaching and smugglers, unholy relationship between community and vested interests which in cumulation has resulted in loss of valuable forest resources and biodiversity. The criminal litigation initiated by forest department against some members of the community is ever increasing. For instance, in the State of Uttar Pradesh, the Government had restricted the peoples use of non-timber products of forests. The same Government had sanctioned the permit to fell the trees in favour of a private establishment for the manufacture of sports goods. As the company initiated the steps to fell the trees, the local community opposed the move. They hugged the marked trees and declared that the trees can be cut only after killing them. This reaction of local community commitment to protect the forest in their vicinity had arisen totally from the community itself. This protest spread to most of the Garhwal Himalaya's. There was severe objection to the felling of forests. This protest caught the attention of the entire nation and Central Government had to finally intervene and banned any felling of the forests. This movement in April 1973 came to be known as the chipko movement. One more important factor that was noticed is that women from the community have led the protest. For the first time in the history of India, the community pressure in natural resource management was brought to fore. Similar protests were reported from several parts of the country. Like the western ghats, and the vast tribal belt extending across the heart of peninsular India. In the Chotanagpur plateau, forest protests formed an integral part of a larger movement for a separate tribal homeland of Jharkhand state, which was covered out only in the year 2000 after prolonged struggle.

In the state of West Bengal (Arabia area), a remedial process was set in motion by few personnel of the forest department community wherein the community was requested to assist the forest department in maintaining the forest resources and in turn the community was given the right to avail few services from forest like fuelwood, grazing etc. This resulted in community working in tandem with the forest department and both the community and forestry receiving benefits. It was an experiment of mutual cooperation between the authoritarian Government officials and the suspicious local villagers, which successfully regenerated the degraded Sal forests of southwestern Bengal. This was later followed in the State of Haryana (Sukhomajiri Project), in the State of Gujarat (South Gujarat initiative by AKRSP and other) (Jodha 2000). Under this scheme, ownership of specific forest resources is shared between the state and community. The state owns the timber and sets rules about its protection and harvesting. The community owns the non-timber forest products and is allowed to manage and harvest these as it wishes. The encouraging results have influenced the Ministry of Environment and Forests to issue guidelines regarding the Joint Forest Management as a part of the National Forest Policy on June 1, 1990. After a decade of the adoption of this practice which is more of community initiative, 22 states of India are following this. 10.24 million hectares of forest area is managed by 36,075 JFM communities with many positive developments like increased forest cover as indicated by remote sensing imageries and improvement in livelihood conditions of forest communities.

The success of the Joint Management of Forests has influenced the neighbouring countries to introduce this model in their management policies.

WATERSHED MANAGEMENT

Jawaharlal Nehru, the Prime Minister of India once described dams as 'temples of modern India'. But till the mid 80s four major dams had run into public opposition—the Silent Valley hydroelectric project, the Bedthi Project in Karnataka, the Tawa Project in Madhya Pradesh and the Koel Karo Project in South Bihar. The mega dams were generating immense social and ecological problems—from forced displacement of large number of villagers to ecological destruction of both catchment and command areas (Table 2). The chorus of public protest led to the rejection of many proposals where ecological impacts were seen to be high. It is obvious that in the years ahead, it is even more difficult to build dams. The big dam constitutes the country's irrigated sector where the responsibility of the Government is to provide water for agriculture and upkeep of the water distribution system and community or users have to pay less for the services. The un-irrigated sector of the country has witnessed many silent revolutions in the form of watershed development in different parts of country without the attendant protests and displeasure of the community as has been witnessed in the irrigated sector. Watershed development has been conceived basically as a strategy for protecting the livelihoods of the people inhabiting the fragile ecosystems experiencing soil erosion and moisture stress. In the mid 70's, Krishna Bahvrao Hazare returned to his destitute village 'Relegaon Siddhi' (Maharastra State) and began to mobilise his community to start managing the village natural resources in such a way that water resources were managed in an equitable manner by ensuring that the community cropping patterns matched the availability of water resources.

These experiments evolved considerable interest among policy makers, non-governmental agencies (NGOs), researchers and international funding agencies. By the mid 80s, the Government had begun to wake up to the environmental degradation, rural poverty crisis and in 1985, the Government announced the establishment of the National Wastelands Development Board and assigned it the daunting task of aforestation 5 million hectares a year. In 1992, the Government decided to integrate all rural development/employment programmes into watershed development.

A silent revolution took place in Madhya Pradesh, where people's movement for watershed development could fructify in more than 8000 villages. With good results showing now the focus of state agencies is to develop area on the basis of watershed management with the approval of the community. With the adoption of this management tool, there is no reason why by 2015, India cannot regenerate all its degraded lands and get rid of the 'abject poverty' that remains as a blot on the country.

Name of dam	Year since the protest become active	Issue of protest	Details	Status
Koel Karo, Bihar	1973	Displacement of tribal, Loss of forests and farmland	1256 villages affected (mostly tribal)	NHPC has pulled out of project
Tehri dam on Bhagirathi, UP	1978	Fragility of ecosystem Dislocation of people	195 villages affected Displacement of 70000 people	Petition pending in Supreme Court, Protest continues
Subamarekha, Bihar	1978	Displacement and Rehabilitation	Displacement of 120,000	Work and Progress continue
Bedhi, Karnataka	1979	Environment and Displacement	Around 4,000 tribal displacement	Scrapped
Bhopalapatanm-Inchampalli, Maharastra	1983	Displacement and lose of livelihood Environment	Effecting 75,000 tribal	Scrapped
Sardar Sarvar on Narmada Gujarat	1985	Rehabilitation and Resettlement	Displacement of about 400,000	Work and Protest continue
Bodhghat on Indravati, M.P.	1986	Environment	Affecting about 10,000 people	Scrapped
Maheshwar on Narmada, MP	1992	Rehabilitation and Resettlement	Over 400,000 will be affected	Work and protests continue
Bisalpur on Banas and Dai, Rajasthan	1993	Rehabilitation and Resettlement	Displacement of over 70,000	Do
Bargi on Narmada, MP	1994	Rehabilitation and Resettlement	Submergence of about 162 villages	Do

Table. 2: Details of some major dams and related issues.
(Source: State of India's Environment: Centre for Science and Environment, New Delhi).

JUDICIAL PRONOUNCEMENTS

When environmental laws were first enacted in 1970s, there was little to distinguish the environmental law from that of general law. The body of case law is very little and most of them are actions in tort. However, the Bhopal accident has transformed this to a new level of activism by the judiciary, which was hitherto a silent spectator to environmental degradation for more than two decades. In one instance, the Supreme Court has expressed its concern "If the mere enactment of laws relating to the protection of environment was to ensure a clean and pollution free environment, then India would, perhaps, be the least polluted country in the world. But, this is not so. There are stated to be over 200 Central and State statutes, which have at least some, concern with environmental protection, either directly or indirectly.

The plethora of such enactment has, unfortunately, not resulted in preventing environmental degradation which, on the contrary, has increased over years" (Indian Council for EnviroLegal Action Vs Union of India 1996 (5) SCC 281, 303).

One of the most important factors that have influenced environmental governance in the country is the entertaining of Public Interest Litigation under Art. 32 and 226 of the Constitution of India. By enlarging the scope of 'locus standi' judiciary has provided an effective forum for concerned persons to seek judicial assistance for prevention and control of degradation of natural resources. And the judiciary has proved very effective in meeting the need of the hour. It has dealt with many aspects of environment like protection of Taj Mahal from air pollutants, protection of coastal environment, urban automobile pollution etc. In the process of environmental justice delivery, it has assumed a pro-active role of public educator (M.C. Mehta Vs Union of India AIR 1992 SC 382 (Supreme Court directions to broadcast and telecast ecology programmes on the electronic media and include environmental study in school and college curricula), policy maker (S. Jaganath Vs Union of India AIR 1997 SC 811 (Supreme Court has directed non-traditional acquaculture along the coast with a view to protect the fragile coastal environment), and has held that 'Right to Clean Environment' is a fundamental right (Subhash Kumar Vs State of Bihar AIR 1991 SC 420) as and when opportunity came its way.

In the process of delivering environmental justice, judiciary has laid down several principles regarding the natural resources management. The judiciary has internalised several international principles like Polluter Pays, Precautionary Principle, Public Trust Doctrine etc.

Conclusion

From the above discussion, it becomes clear that the activities emanating from horizontal influences have produced better results compared to those influenced by vertical forces. At the same time, vertical influences have come to stay but their success is directly related to the quantum of subsidisation. However, in view of globalisation, vertical influences have to be accommodated in a phased manner, so that community can accept the same and strive for optimisation. State in a developing economy should provide an impetus so that the community also can play a catalytic role in shaping the policies for sustainable development through internalisation of vertical forces.

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Preventative Strategies for More Effective Multilateral Environmental Agreements: Potential of Cleaner Production

by Tamilla Gaynutdinova[*]

Global ecosystem continues to be threatened by grave imbalances in production and distribution of goods and services, Global Environmental Outlook 2000 concluded (GEO-2001). Despite to proliferation of multilateral environmental agreements, effectiveness of global environmental protection remains rather low and needs to be significantly improved. Desire to improve effectiveness of global environmental governance explains high interest of analysts to the question how and, even if, international environmental agreements can influence the behaviour of the nation states—the key actor in implementation and enforcement of international standards.

Three different schools of thought address this question (Cameron J., et al., 1996). So-called pragmatists believe that international law has great effect in changing damaging behaviour of nation states. The realist school denies effect of international treaties on national policies, explaining that nations take actions conforming to treaty provisions by other political and structural factors. Finally, the institutionalist school suggests that the effectiveness of the regimes can be improved via a number of methods to overcome the unwillingness of the nation actors to comply with the international agreements (Young 1999). They suggest several factors that help to change a nation state behaviour via international regimes, including, inter alia, making the behaviour of states transparent, applying political and/or economic sanctions to those with uncooperative strategies, or providing positive incentives via offering financial and technical assistance.

The practical goal of research on this matter is to find out what norms, principles, strategies influence undesirable behaviour of nation states and how to design more effective international environmental regimes. The role of preventative strategies has received rather little attention in this discussion. Main aim of the present article is to highlight yet unexplored potential of the preventative strategies as a factor to improve effectiveness of the international regimes via bridging gap between interests of the state actors and goals of the international environmental treaties. It provides several ideas on why and how preventative strategies can help in linking interests of a state and sub-national implementation actors (industry) and goals of international environmental regimes. The author hopes that the suggestions provided in this article, although greatly simplified, would initiate future debate and research on this topic.

For the goals of this article, effectiveness of an international regime is defined as its ability to resolve the environmental problems that caused its creation.

Preventative strategies

> Many negotiations tend to focus only on allocation of losses incurred through environmental regulations. They do not deal with the gains resulting from wiser resource management and the ways they might be shared. Indeed, most environmental treaties aim to curtail pollution or to regulate the use of common resources by restricting the activities of the Parties. … Ways of sharing the economic benefits of environmental protection and preservation are rarely offered as a compelling rationale for participation, although the gains rather than the losses should be the main focus (Susskind 1996)

Preventative strategies aim at resolving environmental problems before they occur. They have been developed over past three decades as an alternative to the traditional so-called "end-of-pipe" approaches that control the impacts of pollution *after* the pollution has been generated. The end-of-pipe strategies do not eliminate pollution, but merely transfer it from one media to another; require expensive pollution treatment equipment; discourage technological innovation toward achieving environmental benefits beyond compliance; and hinder stakeholders dialogue.

Preventative strategies, oppositely, bring not only environmental, but also social and economic benefits via increased resource efficiency, innovation and reduction of pollution control costs. In the present article the term Cleaner Production is used as an encompassing concept conveying elements of several other preventative strategies (i.e., Design for Environment, Eco-Efficiency, Pollution Prevention, Environmentally Sound Technology) (Van Berkel R., 1999).[51]

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[51] UNEP defines Cleaner Production as "the continuous application of an integrated preventive environmental strategy to processes, products, and services to increase overall efficiency, and reduce risks to humans and the environment. Cleaner Production can be applied to the processes used in any indus-

Cleaner Production is addressing *the root causes* of environmental problems, rather than their *effects,* through an integrated package of improvements at all stages of a process and product life cycle. It eliminates or minimises the very need for costly abatement, treatment and disposal systems—integral parts of conventional end-of-pipe environmental protection strategies. Moreover, it encourages innovation and stakeholder dialogue, eliminates trade-offs between environment and economic growth, and ensures consumer and worker safety.

Many countries, especially industrialised ones, opt for preventative strategies in their environmental protection. The benefits of the strategy are well proven. National Cleaner Production Centres (NCPCs), established under the joint UNIDO/UNEP programme for promoting Cleaner Production, now exist in more than 20 developing countries world-wide. The NCPCs' activities include awareness raising, technical assistance, training, information dissemination, and policy advice.

Cleaner Production networks operate both in developing and developed countries and involve well-known academic institutions, industry, local and national governments, consultants and civil society. Cleaner Production strategies laid a basis for many effective national environmental regimes. A famous example is reducing organic pollution from pulp and paper sector in Canada via Cleaner Production strategies. Canadian regulation on pulp and paper sector based on Cleaner Production has achieved the goal of reducing pollution, but also facilitated economic development and increased competitiveness of the sector (Higgins 1999). Many other developed countries that earlier employed Cleaner Production strategies have achieved high quality of life and better environment.

However, despite to the strong evidence that Cleaner Production helps to strengthen environmental regimes at national level, international environmentally regimes are lagging behind developments in national environmental regulatory frameworks. Decision-makers in most developing countries are still unaware of benefits of the strategy. Overall, it can be stated that the potential of Cleaner Production remains untapped.

Cleaner Production for more effective environmental regimes

Sustainable development, as a shared goal of all multilateral environmental agreements, requires not only widened participation in multilateral environmental agreements and improved compliance, but also ensuring synergism of MEA objectives and social and economic demands. A major issue of linkages between environment and development can be more successfully resolved if Cleaner Production becomes a core strategy for implementing multilateral environmental agreements, because it is a proven way to foster economic development while simultaneously improving environmental performance. Cleaner Production offers a way to bridge global dichotomy by linking development goals of a nation state with the environmental goals of an international regime.

The lack of political will to participate in global and regional international regimes is often rooted in a persisting perception that costs of environmental protection can slow down economic development by distracting limited financial resources from areas that are more important from the point of view of local population. Indeed, when implementing multilateral environmental agreements relies mainly on the end-of-pipe solutions, associated high costs of abatement technologies and administrative costs can hamper economic development. In 1970s-80s, prior to adopting preventative policies in industrialised countries, investments in pollution control in industrialised countries were more than 5% of total industrial investment (El-Kholy O., 2001).

For example, the perceived high costs of pollution reduction measures were the important reason for the initial lack of political will of countries in transition to participate in the international efforts to protect the Danube River. "Faced with deteriorating local economies and high levels of unemployment, Eastern European governments have balked at the thought of closing plants to preserve the tributary (Danube)" (TED Case Study, 1997).

Moreover, even if a country is willing to joint and implement regime requirements (due to, for example, strong political pressure to join an international regime, expected long-term benefits or other factors), it might be unable to undertake truly effective measures to reach goals of the regime. Sometimes the targeted actors chose to comply only with the formal obliga-

try, to products themselves and to various services provided in society. For production processes, Cleaner Production results from one or from a combination of measures conserving raw materials, water and energy; eliminating toxic and dangerous raw materials; and reducing the quantity and toxicity of all emissions and wastes at source during the production process. For products, Cleaner Production aims to reduce the environmental, health and safety impacts of products over their entire life cycles, from raw materials extraction, through manufacturing and use, to the 'ultimate' disposal of the product. For services, Cleaner Production implies incorporating environmental concerns into designing and delivering services".

tions of a multilateral environmental agreements, instead of taking actions to ensure effective implementation of the agreements. For example, they might put in place legislation as required by the regime, but are not be able to enforce its effective implementation due to the lack of administrative power, national capabilities, and financial means.

In case of international regime for Danube river protection, participation in the regime of the countries in transition in the river basin to a large extent is a result of political pressure from their powerful neighbours—Austria and Germany, keen on restoring quality of the river, and of the aspiration to join European Union. The countries joined the Danube River Protection Convention that has been opened for signature in 1994. However, the countries have big difficulties in putting their expressed political commitment to protecting the river into actions, as political commitments "did not pass the litmus test" of commitment by the ministries of finance, reluctant to approve environmental loans. For example, the 130 "hot spots", main industry polluters affecting the Danube tributaries have been identified, but only a small number of them have been addressed through the investments projects (1st Meeting of the Danube Recovery Program Project Group, 1997). Therefore for the countries in transition in the basin it is easier to comply with formal requirements of the Convention, namely, approximation of national legislation to EU standards and institutional strengthening of national authorities, rather than with the spirit of the regime. A Slovak official responsible for implementing the Convention in Slovakia admitted during an interview[52] that that is exactly situation in his country, and that the financial support from PHARE in foreseeable future would hardly be used on actual implementation measures to reduce pollution load in the river. He stated that targeted investments or projects would hardly be of high significance, especially because of the transboundary character of the problem, when nation has choice of focusing on actions within the country, instead of tackling enterprises at its borders.

If national policy makers would have been aware about Cleaner Production potential for meeting the goals of multilateral environmental agreements, some of the named above challenges could have been more successfully resolved. Of course, economic considerations alone are not sufficient condition for international actions under environmental regimes. They do, however, influence political decision-making, and when implementing regime is linked to development benefits, it is more likely that policy makers in a nation state will opt for compliance with the regime, and not only with its formal obligations, but with it spirit.

In case where political will of the national authorities is not strong enough, Cleaner Production projects can target directly sub-national actors. Cleaner Production allows involving the relevant business sectors more closely in implementing environmental conventions. For the private sector multiple benefits of the strategy have direct appeal and can secure its participation in the regime implementation. Those considerations were in the basis of the project of Transfer of Environmentally Sound Technology to reduce transboundary pollution in Danube River basin. This project is a good example of how to facilitate implementation of the regime via Cleaner Production.

The project was developed by the UNIDO—when, in 1997, the review of implementation of Strategic Action Plan for the Danube River Basin has shown unsatisfactory results of the Danube-related activities due to over-programming and under-financing. The UNIDO suggested a comprehensive strategy of using Cleaner Production network, actors, methodologies and tools for goals of the Danube Convention. The main approach is highlighting economic benefits of environmental improvements to the enterprises and identification of the least costly path to compliance with environmental norms.

Although it is early to speak of its results, it should be noted that a goal of 30% pollution reduction from 20 pilot enterprises selected out of 130 hot spots seems to be not only realistic, but even modest, because available documentation on Cleaner Production proves that even higher reductions in pollutant loads can be achieved via implementing Cleaner Production assessments, low-cost process and product modification combined with switch to environmentally sound technologies.

Of course, Cleaner Production initiatives cannot be truly efficient unless an adequate pricing system for natural resources and relevant policy and regulatory framework exist, but they can lay first steps in creating awareness and changing behaviour of the key actors. The TEST project also shows that Cleaner Production strategies might be used even there is little will in national governments to take practical measures, and that non-state implementation actors (such as UNIDO and its National Cleaner Production Centres network) can help in implementation of the agreements by providing positive incentives to the final implementation actors—industry.

National policy makers could adopt environmental

[52] He asked to remain anonymous.

strategies and policies that encourage innovation, are based on economic instruments, rather than common and control approach, and promote cost-effective environmental solutions based on prevention. Cleaner Production strategies for environmental protection are usually less costly to implement, operate and maintain over long-term rather than end-of-pipe solutions, and actors (countries or individual enterprises) that invest timely in Cleaner Production gain competitive advantage over those burdened with expensive and inefficient end-of-pipe technology.

So far, however, many multilateral environmental agreements attempt to resolve a challenge of issue linkage by providing for financial and technical assistance. Unfortunately, financial and technical assistance under the multilateral environmental agreements rarely takes into account a holistic view on linkages among environmental problems and economic development. Often available resources are used on spreading environmental control technologies, rather than on investment in the sustainable in long term Cleaner Production projects, which increases dependence of the developing countries on further external assistance.

Wider integration of Cleaner Production into international environmental regimes could help both to influence actors who want, but are unable to comply, and provide incentives to re-examine the costs or/and priority given to compliance and participation in implementing international regimes by putting emphasis on social and economic benefits at the national level that can be derived from participating in international environmental protection.

Cleaner Production in MEAs: Current situation

The notion that prevention is better than cure is well known and accepted. Benefits of preventative strategies are also recognised, at least formally, in the international environmental governance. Preventative schemes are emerging at multilateral arena. Many modern multilateral environmental agreements (incl. the Basel Convention, the Stockholm Convention, the Regional Seas Conventions, the Kyoto Protocol, etc.) require preventative measures. Parties are encouraged to follow principles of precaution and prevention, use using harmless alternatives, undertake assessment of impacts and risks, use Best Available Techniques and Best Environmental Practices, etc.

However, despite to multiple references to Cleaner Production or its components in the legal text of multilateral environmental agreements, preventative schemes in international governance still have mainly nature of "soft law". More often than not, obligations of Parties in regard to preventative measures have general character, do not contain indicators for measuring success, and therefore often do not get sufficient attention both in the negotiation process and in the consequent implementation and monitoring of multilateral environmental agreements. Little has been done to implement multilateral environmental agreements provisions of preventative nature. Parties tend to concentrate more on implementing specific provisions linked to clear targets and standards. It is easier to understand specific obligations and take narrowly defined measures rather to apply integrated prevention-based approaches to implementation of the regimes, as it requires more profound changes in overall policy making. Similarly, the secretariats of the multilateral environmental agreements also give little priority to promoting innovative approaches for complying with the spirit of multilateral environmental agreements.

A case of the Basel Convention is a typical example of inconsistency between general principles guiding the spirit of the agreement and actual implementation. Although prevention of generation of waste is one of key governing principles of the Convention, in practice activities under the Basel Convention so far have been focused more on the regulation of the trans-boundary movements of waste, rather than on waste prevention (Bakken P., 2000). By 1994, only 13 parties had submitted any information on the measures taken to reduce hazardous waste generation. In 1995 the Secretariat noted that the information on efforts to reduce trans-boundary movements of hazardous wastes generally had not identified waste minimisation as a method (Krueger J., 1999). Some estimations show that even in OECD countries prevention accounts for a mere 10-20% of overall waste minimisation efforts (Waller-Hunter J., 1999). Therefore, while the Convention was relatively successful in reaching its goals of preventing illegal traffic, its effectiveness in regard to the main goal of preventing environmental impacts of generation of wastes remains low.

It is not surprising, if one recalls that the Convention's provisions on waste minimisation are vague and general, while provisions on hazardous waste control system are elaborated and specific. It is also indicative that the Manual for the Implementation of the Basel Convention prepared by the Basel Convention[53] does not contain any suggestions in regard to prevention of generation of wastes.

[53] Available at the Basel Secretariat website: www.basel.int.

Nevertheless, there is at least one case where the Basel Convention allowed to the Cleaner Production allies to lobby for National Cleaner Production Policy. The Czech National Cleaner Production Centre has played important role in shaping the Czech Republic national environmental policy. Former director of the Centre recalls that references to the country's obligations for waste minimisation under the Convention helped to lobby for National Cleaner Production policy.

Currently the pressing need to shift focus toward preventative strategies is gaining wider recognition among high-level decision-makers and implementation actors of multilateral environmental agreements. For example, the recent developments under the Basel Convention,[54] including the Basel Declaration on Environmentally Sound Management of Hazardous Waste and strategic documents of the Secretariat, give ever-high priority to promoting Cleaner Production and practical integration of preventative approaches into implementing the Convention in the next decade. There is also work in process on developing measurable indicators for reviewing progress of nation states in waste prevention.

Cleaner Production also should be considered as a strategy to integrate the goals of different Conventions, helping to respond to the need to enhance coordination, coherence and synergies among multilateral environmental agreements (UNEP Governing Council, 20/16, 1999). Tackling environmental problems in a holistic way, based on preventive and a life cycle approach, is a way to synergise efforts of different Conventions in pursuing a common goal of sustainable development. For example, Cleaner Production could be an effective strategy to resolve contradictions between goals of the Kyoto and Montreal Protocols. The Montreal Protocol regime resulted in increased use of hydrofluorocarbons (HFCs) as substitutes for ozone depleting substances. This contradicts the goals of Kyoto Protocol, because HFCs are gases with high global warming potential. Cleaner production approach to reconcile goals of both protocols is to develop systems and mechanisms that use HFC in such a way so that the combined greenhouse effect of HFCs and carbon dioxide is lower than that of carbon dioxide emissions from the old technology (Synergies, 2., 1999).

Similarly, efforts of the Rotterdam, Basel, the Stockholm Conventions and Global Programme of Actions for Protecting Marine Environment from the Land-Based Sources (GPA) could be synergised via systematic preventative management of hazardous chemicals. Cleaner Production strategies oriented at the elimination of the organic persistent pollutants at the same time could help reduce the need for their import (addressed by the Rotterdam Convention) and disposal (covered by the Basel Convention), as well as contribute to the GPA's goal of protecting the marine environment from the land-based sources.

The serious problem in tapping potential of Cleaner Production is the lack of links (both professional and personal) among multilateral environmental agreements implementation and Cleaner Production networks. It often leads to duplication of efforts, both in capacity building activities and in activities linked to developing manuals and technical guidelines under the multilateral environmental agreements. Wealth of information, technical documentation, case studies of Cleaner Production remains unused by multilateral environmental agreements implementation actors, as they are not aware of this information. Lack of communication between multilateral environmental agreements actors at international, regional and national level and Cleaner Production practitioners hampers possibility for using the concept for more effective and cost efficient implementation of regimes.

Conclusions and recommendations

This article highlighted the potential of Cleaner Production to improve implementation of international regimes via providing linkages among interests of targeted actors at national and sub-national level and goals of the regimes. The case study on the TEST project to reduce transboundary pollution in Danube river basin has demonstrated that Cleaner Production strategies offers a way to involve private sector in implementing the goals of multilateral environmental agreements by emphasising economic advantages of improving environmental performance.

However, despite to emerging preventative international environmental regimes, the potential of preventative strategies remains largely unrealised. Clearly, there is a need for serious multidisciplinary research on how to tackle Cleaner Production's potential for creating more effective multilateral environmental agreements and strengthening existing ones. Should future multilateral environmental agreements incorporate stronger language requiring preventative measures from the parties? Should more specific goals and indicators for preventative actions be integrated into multilateral environmental agreements? How to make that more politically acceptable?

Comparative studies of implementing provisions

[54] Strategy directions reference from the Basel Convention

under multilateral environmental agreements via end-of-pipe solutions versus Cleaner Production strategies also could be undertaken. Further research on case study of TEST project also can possibly provide a model for bottom-up actions for implementing multilateral environmental agreements, even when national governments lack initiative in preventative actions. Participatory research is also could tackle problems of increasing awareness about preventative environmental strategies among high-level decision-makers and implementation actors at all levels. It is also important to study how civil society can push for preventative strategies under the specific multilateral environmental agreements. There is also a need for developing politically acceptable, realistic strategies for linking Cleaner Production networks and implementation bodies of multilateral environmental agreements.

Cleaner Production strategies, with their life cycle approach to environmental problems, can also offer ways to find synergies among multilateral environmental agreements, and this possibility also have not yet been tackled by researchers.

UNEP DTIE started work on linking capacity building efforts under the key multilateral environmental agreements (the Basel Convention, the Stockholm Convention and some Regional Seas Convention) with capacity building for Cleaner Production performed by the NCPCs world-wide. The NCPCs can provide training, policy advice, technical assistance services to the multilateral environmental agreements implementation bodies and improve effectiveness of implementation efforts by avoiding duplication of efforts and suggesting innovative solutions. However, that is only one aspect of potential contribution by Cleaner Production and its allies to effective environmental regimes, and there is a need for concerted actions of different actors, both among academics and practitioners, to address adequately the potential to improve effectiveness of international environmental regimes via Cleaner Production.

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Conflict Resolution in Ecological Negotiations

*by Mary Jo Larson**

This article investigates the functions of multilateral negotiations contributing to the resolution of ecological conflicts. The case study is global climate change. A conflict resolution systems framework organises the political preferences of a high power country and a low power regional alliance in United Nations (UN) environment and development negotiations. The analysis suggests that multilateral negotiations have multiple functions. The United States (US) is observed as an actor avoiding global environmental governance. From this high power perspective, the role and security of the nation state remains central. In contrast, the Alliance of Small Island States (AOSIS) demonstrates a preference for co-operative approaches to global environmental governance. From the small island perspective, the role of international institutions is to construct policies and procedures that address the security needs of vulnerable subsystems within the international system as a whole.

Background

Climate change is a complex, multi-party conflict. High and low power groups are intentionally struggling for significant symbolic, social and material resources. Factors affecting proposed solutions include differing ideologies, values or cognitive structures (Druckman and Zechmeister 1973), differing approaches to authority and legitimacy (Weber 1947, Moore 1986, Carpenter and Kennedy 1991), and the asymmetrical control of global resources.

United Nations (UN) sponsored negotiations have been extensive and complex, involving public, private and independent sector parties and multiple formats. Since the late 1980s, the UN member states have come to UN formal conferences and informal meetings to debate levels of risk and preferred responses. The negotiations have involved 186 UN member states, including the least developed and the most industrialised nations in the world. High and low power groups bring different perspectives as they negotiate to define ecological conditions, the alternatives for regulating threatening behaviours, and the realignment of energy consumption patterns.

The small island nations, which are among the UN parties most at risk to rising sea levels, have been active participants in UN climate change negotiations. In response to the direct and cultural threats associated with global climate change, small island and coastal nations established the Alliance of Small Island States (AOSIS) during the Second World Climate Conference in 1990. AOSIS consists of 43 states located in Africa, the Caribbean, Indian Ocean, Mediterranean Sea, Pacific Ocean and South China Sea. Evidence of AOSIS concerns and influence is found in the 1992 Framework Convention on Climate Change, particularly in its explicit references to "island." The Convention recognises small island issues in the first section of the agreement, in two introductory statements:

> Recalling also the provisions of General Assembly resolution 44/206 of 22 December 1989 on the possible adverse effects of sea-level rise on islands and coastal areas, particularly low-lying coastal areas (FCCC 1992: 1)

> Recognizing further that low-lying and other small island countries, countries with low-lying coastal, arid and semi-arid areas or areas liable to floods, drought and desertification, and developing countries with fragile mountainous ecosystems are particularly vulnerable to the adverse effects of climate change, (FCCC 1992: 1)

Following the ratification of the 1992 Convention, AOSIS was the first political group to submit a proposal for a protocol on the reduction of greenhouse gases. Functioning as a moral conscience in the negotiations, AOSIS worked in partnership with the G77/China, the European Union and NGOs to move the proposals from the discussion of a convention to practical commitments and effective adaptations (Slade 1995).

Whereas AOSIS has negotiated from the periphery of global economic power, the United States (US) has been a powerful economic player in climate change negotiations. The US represents the interests of a political union of 50 states and economically dominant multinational corporations. With less than 5% of the Earth's population, the US accounts for approximately 25% of global fossil fuel use (UNEP Biennial Report 1996-1997).

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Conflict resolution

Efforts to address ecological conflicts involve complex, multi-level political systems. Through multilateral negotiations, the UN provides a global forum for member states and independent sector representatives, such as non-government organisations, to exchange information, debate alternatives, and construct consensual solutions. Conflict resolution is a dynamic communicative process. No form of violence or coercion is implied. Ideally, the aim is to build a consensus on solutions contributing to sustainable, mutually beneficial inter-relationships. As demonstrated by this study, the preferences of the parties vary, depending on the forms of power under consideration. The alternatives in response to conflict can be outlined on a continuum. They include both integrative and distributive relationships.

The highest level of integration is collaboration. In climate change agreements and position articles, this "core" relationship is associated with the centralising function of the UN. An example of collaboration is the establishment of core UN research.

Co-operation is the next level of integration. This inter-group relationship involves some give and take. In climate change negotiations, co-operative relationships address issues of equity. The parties interact as industrialised (Annex I) and developing nations or they involve party sovereignty and the functions of the UN, e.g. voluntary participation by sovereign states in UN mechanisms.

Distributive alternatives recognise that parties have, and want to maintain, sovereign rights and interests. Parties may prefer to co-ordinate or harmonise their activities, rights and responsibilities. For example, parties may agree to co-ordinate mechanisms for scientific assessments and the submission of regular reports to the UN Secretariat.

Competition is another distributive function. This relationship recognises that parties want to gain relative advantages. An example of a competitive statement as it relates to climate change is a one that proposes that UN member states provide incentives for business investments in new energy technologies.

Conflict resolution systems framework

This study uses a systems framework (see Larson 2001 for more details) to monitor indicators of documented political preferences in the climate change position papers and agreements; specifically the:

- UN Framework Convention on Climate Change (1992);
- UN Kyoto Protocol (1997)
- US Government Position on Climate Change Policy and International Negotiations (1996), published by the Environmental Protection Agency (EPA); and
- AOSIS position paper (1994), submitted to the Eleventh session of the Intergovernmental Negotiating Committee.

Recognising that conflict resolution is a dynamic (Δ), adaptive process of responding to changing conditions, the conflict resolution (CRΔ) framework provides a systematic means of comparing the documented preferences of different parties at different times. This analytic tool does not illustrate all of the influences on multilateral negotiations. Instead, it brings certain variables into focus, and reduces the significance of others. By design, it suggests that relationships and power are key features contributing to conflict resolution.

Content analysis is the methodology that transforms the verbal information in the negotiation documents into codes that can be counted, compared and analysed (Robson 1993). In this study, content analysis documents the interpretations of one researcher assisted by multiple reviewers. Druckman and Hopmann (1991) have noted that the potential benefits of this measurement technique include the integration of theory, data collection, analysis and interpretations.

One weakness of content analysis is that researchers may influence choices through biased selectivity of documents. Another weakness is that access to negotiation documents may be blocked by classification regulations. To minimise these weaknesses, the documents in this study have been selected and analysed with the guidance of expert informants, including policymakers engaged in the negotiations in 1992 and 1997.

The units of analysis are statements in negotiation agreements and position papers. These statements have pragmatic functions. They are communicative actions that assert or propose; regulate or prescribe; or express intentions (White 1988).

The conflict resolution (CRΔ) systems framework organises the statements in position papers and agreements into categories of political preferences. The framework presented in this article is a 3x3 matrix. Along the vertical axis, there are three levels of integration. Each is associated with a relationship—collaboration is associated with core UN roles, co-operation with inter-group functions, and co-operation and competition with state governments.

Along the horizontal axis are three dimensions of power—symbolic, social and material. Each is associated with a form of empowerment. Appreciating (A) is associated with *symbolic* power. Influencing (I) is associated with *social* power. And managing (M) is related to *material* power.

	Appreciating (A) [symbolic]	Influencing (I) [social]	Managing (M) [physical]
Collaboration (3) [UN]	Building trust and understandings (A3)	Centralising sanctions (I3)	Core funding (M3)
Co-operation (2) [inter-group]	Equitable responsibilities (A2)	Inter-group roles and rules (I2)	Inter-group exchanges (M2)
Co-ordination and Competition (1) [state]	Sovereign rights and interests (A1)	Harmonising and regulating (I1)	Incentives and adaptations (M1)

Table 1: Conflict resolution (CRΔ) systems framework

The CRΔ Systems Framework is based on the assumption that parties contribute to the resolution of ecological conflicts through a dynamic (Δ) process of developing consensus on relationships as they relate to symbolic, social and material forms of power. The relevant functions of these dimensions of power are described below. As outlined below, each has a pragmatic function. Symbolic power is a way to assert or propose; social power is a way to regulate or prescribe; and in negotiations, statements involving physical or material power express intentions to manage resources.

Appreciating (A) is a *symbolic* form of power. Statements in this category assert that standards or condition as right, fair, just or true; and they propose systems for research and information exchange. For example, when the UN defines climate change as a global threat, this asserts a reality or common understanding and provides a rationale for action (A3).[55]

Influencing (I) is a *social* form of power. In negotiations, these statements prescribe and regulate through role clarification, procedures, rules, measures or policies. An example is a proposal that sovereign national governments develop national policies to regulate greenhouse gas emissions (I1).

Managing (M) is a hierarchical form of control over *material* or physical resources. In ecological negotiations, these statements focus on tangible resources, such as funding, efficiencies, technical innovations and cost benefits. An example is a proposal for equitable access to funding with benefits to less developed countries (M2).

In the following pages, the CRΔ Systems Framework is used to categorise proposed solutions to the threats of climate change. The framework is able to monitor multiple preferences. For example, through content analysis, the framework might illustrate that a political group demonstrates a high level of symbolic integration and yet a preference for distributive material solutions.

Role of UN

To begin, this study examines UN climate change agreements to consider how international consensus building contribute to the resolution of ecological conflicts. The documents under consideration are the 1992 Framework Convention on Climate Change and 1997 Protocol. As illustrated below, content analysis demonstrates that the patterns in these two agreements are similar to each other. However, upon closer examination, distinctions appear.

Early in the negotiations, in 1992, the UN Convention begins with the acknowledgement that changes in the Earth's climate are a common concern of humankind and that human activities have substantially increased the atmospheric conditions of greenhouse gases. After establishing this common understanding (A3) early in the negotiations, both the 1992 and 1997 agreements propose flexible (integrative and distributive) responses to the complex threats of climate change. The patterns of consensus building are discussed and summarised below:

[55] In the CRΔ Framework, A3 = Appreciating (A) + Collaboration (3).

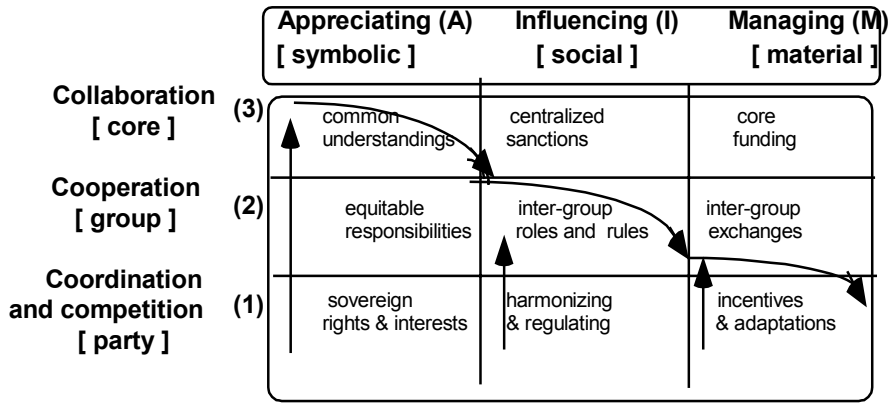

Figure 1: Patterns of Consensus Building

The non-linear trend line in Figure 1 indicates that the 1992 and 1997 climate change agreements have resulted in flexible approaches to symbolic, social and material forms of power. Consensus building has moved from a highly integrative level of symbolic consensus building toward the development of inter-group roles and rules. The process is moving toward the bargaining required to develop binding regulations and effective management of relevant materials. All of the propositions indicating commitments to specific emissions targets were found in the 1997 Protocol. A more detailed analysis reveals the distinctions between the 1992 and 1997 agreements.

The 1992 Convention begins with collaborative symbolic statements of conditions, principles and definitions (A3).

The parties are defining common understandings about the global ecological situation. The power of these symbolic statements is that they frame perceptions and establish assumptions. They provide the rationale for proposed adaptations. In the 1992 Convention, the largest percentage (49.6) of the statements in the agreement are symbolic appreciative (A) statements describing global environmental conditions and establishing credible information gathering systems. All of the statements of concern for ecological inter-relationships are in the 1992 Convention. None of these ecological statements are found in the 1997 Protocol.

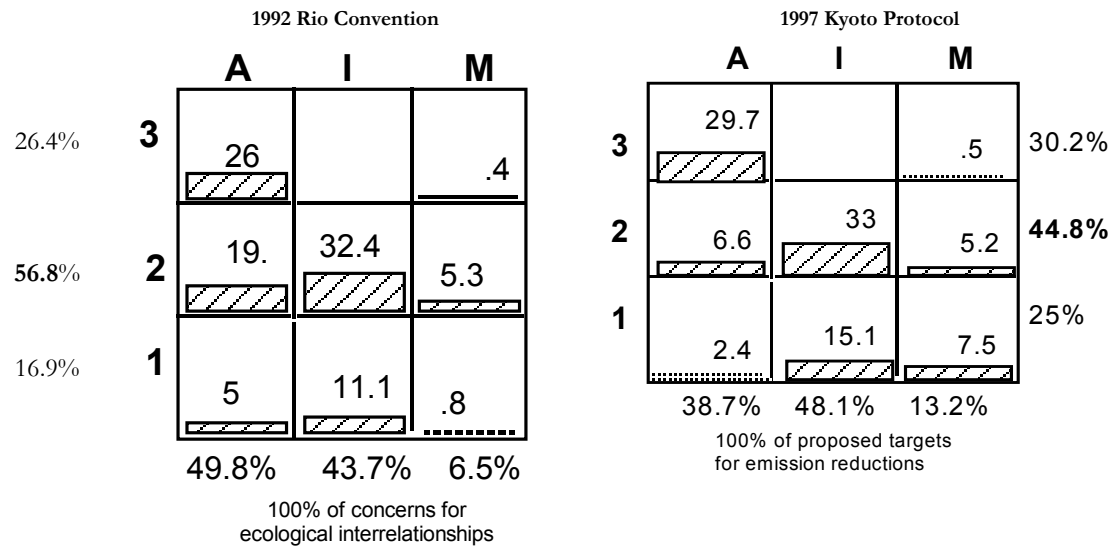

Figure 2: 1992 and 1997 UN Climate Change Agreements

By 1997, the largest percentage (48.1%) of statements in the agreement address social forms of influence (I).

These statements function as agreements about processes. They are process-related outcomes. They include dispute resolution procedures. An example is found in Article 14 of the Convention:

Code I2	In the event of a dispute between two or more Parties concerning the interpretation or application of the Convention, the Parties concerned shall seek a settlement of the dispute through negotiation or any other peaceful means of their own choice.

The analysis of agreements indicates that UN multilateral negotiations have an integrative function. The majority of the statements in the 1992 and 1997 agreements are collaborative (3) and co-operative (2).

Most of the collaborative statements in the 1992 and 1997 agreements are symbolic, such as the development of common definitions and international research and reporting systems. Most of the co-operative statements address social forms of power, such as sources of authority, voluntary rules and dispute settlement mechanisms. It is important to note that the parties do not articulate a need for centralised UN sanctions (I3).

Low Power Alliance

The proposals in the AOSIS position paper are very similar to those in the 1992 and 1997 UN agreements. The following matrix (Figure 3) illustrates findings from content analysis.

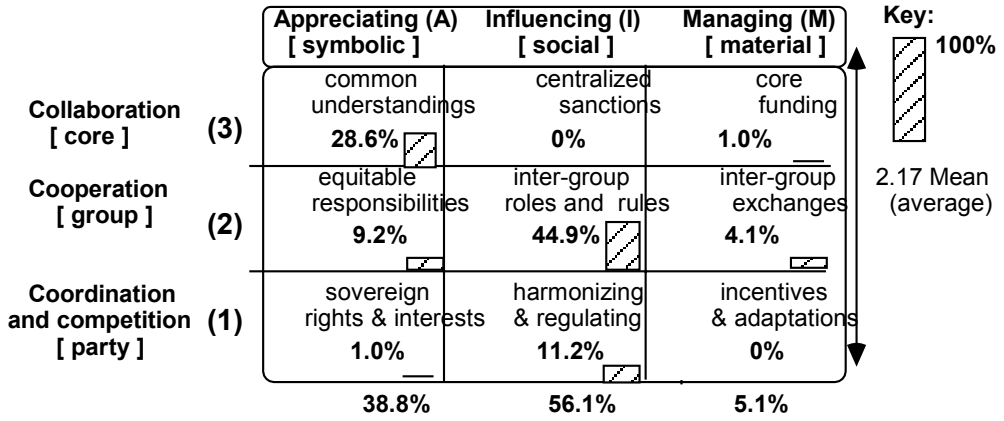

Figure 3: Content Analysis of the AOSIS (1994) Position Paper

Early in the 1994 draft protocol, AOSIS focuses on the threatening ecological situation (A3). The position paper begins with collaborative statements of conditions, principles and definitions. Access to information is also a high priority for AOSIS. The draft protocol has provisions for reporting specific measures related to emissions targets, energy efficiency and technology transfer. To strengthen the alternatives for reviewing and implementing the terms of the protocol, AOSIS has sought access to the services of intergovernmental and non-governmental organisations. A high number (28.6%) of proposals address common understandings and information sharing mechanisms. These statements are coded as A3.

Most of the small island proposals focus on co-operative social relationships. This document demonstrates that AOSIS is an advocate for the development of international environmental regulations. In considering the three levels of integration, it can be seen that most of the statements in the draft protocol are at level 2, which is inter-group co-operation. This suggests that in order to reduce uncertainty, this low power alliance is constructing co-operative social strategies.

The AOSIS category with the highest percentage of statements (44.9%) is the intersection of co-operation (2) and social influence (I). This is shown as I2 in Table 1. These proposals are procedures, forms of authority, administrative rules and other legal mechanisms. The following example of an I2 proposal prioritise consensual agreements. This statement is drawn from Article 10 of the AOSIS document:

Code I2	The Parties shall make every effort to reach agreement on any proposed amendments to the Protocol by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by two-thirds majority vote of the Parties present and voting at the meeting.

The AOSIS draft protocol approaches the issue of commitments through the principle of equity (level 2). It proposes that Annex I (industrialised) countries take the lead in establishing targets and reducing emissions. Statements that propose roles and rules and recognise differences in responsibilities are coded as I2. The following is an example from Article 3.

Code I2	Each of the Annex I Parties shall: (a) reduce its 1990 level of anthropogenic emissions of carbon dioxide by at least 20% by the year 2005" (Article 3).

Principles of equity (A2) are addressed in 9.2% of statements in the document**.** These are statements of "common but differentiated responsibilities" (Article 2). Many of the proposals in the draft protocol are based on this principle. For example, AOSIS proposes that Annex I countries take steps to improve conditions by addressing climate-related vulnerabilities in less developed countries. AOSIS proposes that the transfer of technologies to developing countries take place under "fair and most favourable conditions" (Article 7).

It is important to note that AOSIS does not emphasise material (economic, technical or environmental) obligations. Only 5.1% of the statements in the document are coded in the material (M) category. Nor does AOSIS propose that the UN be given the power to enforce sanctions (I3). This position paper is a non-confrontational effort to establish consensual UN mechanisms that will bring about Annex I adaptations.

The US

A comparison of the content of the US position paper produced by the EPA (1996) to the position paper of AOSIS provides evidence of distinct high power preferences. It demonstrates that the majority of the solutions proposed by the US are symbolic and distributive. Figure 4 illustrates the findings.

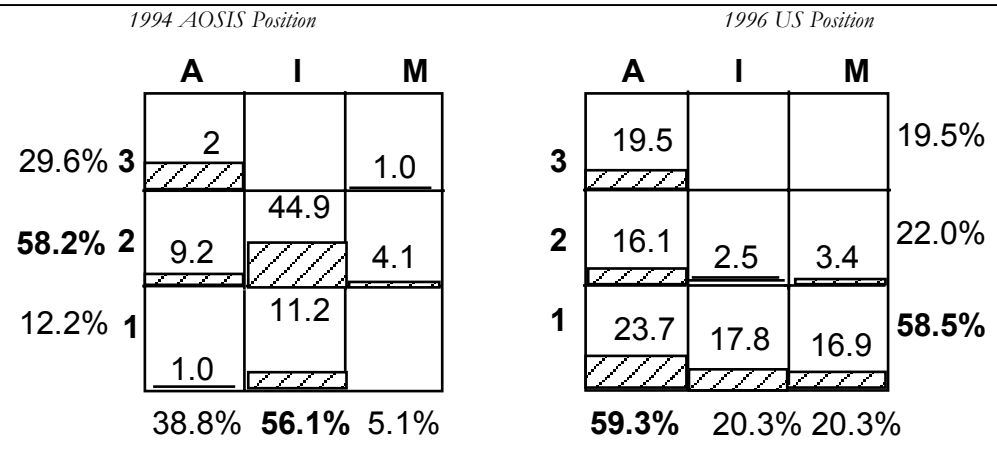

Figure 4: Comparing the US (1996) to the AOSIS Position Paper

Most of the statements in the US position paper address symbolic forms of empowerment. The percentage of symbolic (A) statements is a total of 59.3%. Most are distributive, addressing sovereign Party co-ordination and competition. Adding the percentages of Party (level 1) proposals across the three forms of empowerment, the total equals 58.5%. This high percentage of distributive statements represents a majority of the statements in the document.

The one category with the highest percentage of statements (23.7%) is the intersection of symbolic appreciation (A) and distributive party relationships (1). These are statements that value competitive markets and sovereign rights. The following is an example of an A1 statement that prioritises efficiencies and economic priorities. This statement is drawn from the *Introduction and Background* of the US document:

In *Section V*, the US proposes that actions taken by developed and developing countries should be appropriately balanced, "recognising the common but differentiated responsibilities and respect

capabilities" (A2). Principles of equity are reaffirmed in 16.1% of the statements in the document. However, the US adds that conditions are changing and that "greenhouse gas emissions are growing most rapidly in the developing countries" where they are projected to exceed those of the developed countries by about 2020" (*Section V*).

The US is an advocate for economic and technical approaches that involve the private sector. The US proposes that all nations have an equal responsibility to respond to the threats of climate change (*Introduction and Background*). Notable is the low percentage (3.4%) of statements that acknowledge the needs of developing countries (M2). The US does not prioritise technology transfer, and this public document does not mention poverty, island vulnerabilities or the need to strengthen the local capacities of people in developing countries. Instead, on p.2 of the position paper, the US proposes that the developing countries "show leadership" in addressing the issues.

Code A1	We believe that next steps must be as cost-effective as possible. Our analyses completed to date suggest that more flexible approaches offer significant cost-saving opportunities, and these must be brought into the Convention's basic framework.

Information exchange is a priority. The US proposes that monitoring of national reporting be centralised. UN knowledge building priorities are reinforced through a high number (19.5%) of A3 proposals. The aim is to strengthen common understandings and develop shared information systems. Information gathering should ascertain compliance (Section VI):

Code A3	Ascertaining compliance will involve a combination of: requirements on parties to monitor and report on their emissions; and an international mechanism to verify such monitoring/reporting.

The US supports core information systems, but avoids the centralisation of UN sanctions (I3) or funding (M3), thus avoiding international governance. Very few (2.5%) statements in the US position paper focus on the multilateral roles and rules required to implement a protocol (I2). None of the statements in the document give the UN the power to impose sanctions, and none focus on UN core funding.

There is also an avoidance of statements about material resources. The US is not proactively addressing the management of economic, technical and natural resources.

Lessons Learned

This study provides evidence that UN multilateral negotiations contribute to the resolution of climate change through the consensual development of solutions that propose, prescribe and demonstrate intentions. The analysis demonstrates that UN negotiations construct solutions through a consensual process of building assumptions, prescriptions and incentives. Within the context of dynamic ecological systems, the process of resolving environment and development conflicts is a dynamic relationship building process.

The negotiations function differently for different parties (Adger 1983). The position papers of AOSIS (1994) and the US (1996) indicate that the small island states negotiate to strengthen co-operative international governance structures. In contrast, the United States emphasises symbolic statements and distributive technical and economic interests. One way to interpret the US focus on symbolic statements is to see this as a form of rationality (Habermas 1981, White 1988). The US is negotiating to develop a consensus on the legitimacy of future policies in support of economic advances. This goal contrasts with the environmental and social priorities of other groups, including AOSIS.

Content analysis confirms that low and high power groups prefer different levels of integration. AOSIS, representing the low power group, proposes more integrative solutions. Most of the AOSIS statements (58.2%) focus on inter-group co-operation (level 2). In contrast, most of the US statements (58.5%) focus on distributive Party relationships (level 1). The differences between the two groups are evident when the average (mean) levels of integration are compared. The averages have been calculated by adding the ordinal codes (1-3) demonstrating the observed level of integration of each of the statements and dividing that sum by the number of statements (cases). The average level of integration proposed by AOSIS is 2.17. The US average level of integration is 1.61. Figure 5 illustrates these findings.

A *t-test* results in statistical evidence that there is a significant difference between the average levels of integration in the preferences of these low and high power parties. The results of the t-test are:

$t = 5.83$; $df = 216$; significance level .001

This statistical test confirms that the AOSIS position paper includes more integrative proposals than the US position paper, and that the difference in preferred levels of integration is significant. These findings are similar to those in other studies, including simulated negotiations. Research indicates that delegates with a power advantage tend to be less flexible than those with a power disadvantage (Druckman 1995).

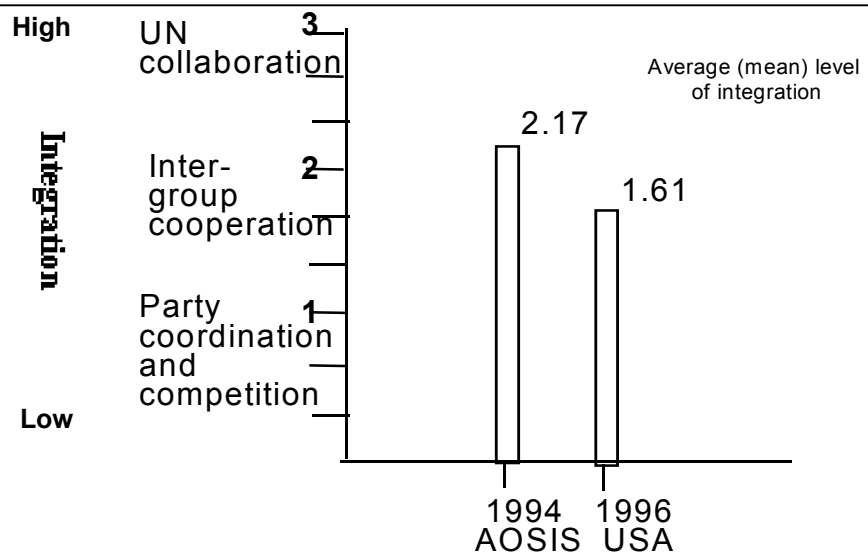

Figure 5: Levels of Integration in AOSIS and US Position Papers

Conclusion

Climate change is an undesirable global ecological condition. It poses uncertain threats to international security, particularly to the lands, communities and ecosystems of less economically developed nations. this article provides evidence that through multilateral negotiations, these vulnerable groups contribute to the resolution of this complex ecological conflict. The UN provides a global forum for the analysis and consensual resolution of issues threatening environment and development relationships. In climate change negotiations, the roles and responsibilities of the parties in negotiations are inter-related, and with primary functions that vary.

The UN provides a global forum for the construction of consensual agreements. No mechanisms of coercion are proposed by the member states. The agreements have integrative functions. The UN is valued as a centre for international dialogue, scientific assessment and the development of inclusive information sharing systems. Through the UN, the political preferences of all member states, including low power parties, are legitimised and made available internationally.

Through multilateral negotiations, low power parties contribute to the resolution of ecological conflict by functioning as advocates for fair and equitable responses to ecological risks. Small island nations enhance their influence through international alliances. Negotiating in coalitions, they demonstrate a preference for co-operative approaches to global environmental governance. From this perspective, the function of UN negotiations is to construct policies and procedures that address the security needs of vulnerable populations within the international system as a whole.

In contrast, the US avoids international environmental regulations. From this high power position, the role and security of the state remains central. Instead, the US prioritises sovereign economic interests. In the search for solutions to climate change, the US favours distributive alternatives, including coordinated technical innovations and the benefits of economic competition.

The analysis above indicates that complex negotiations--those involving high stakes and extensive global relationships—result in both flexible proposed solutions. UN, regional and state parties contribute to conflict resolution through integrative and distributive functions. Some preferences are collaborative, some are co-operative, and others address unilateral interests. Parties integrate global relationships through transnational research and development efforts. Integrative adaptations are also proposed through UN regulatory systems.

This study contributes to the analysis and practice of conflict resolution through the development of a systems framework that clarifies multi-party proposals, prescriptions and intentions at different points in time. The purpose of this tool is to more explicitly value the contributions of multi-level actors as they address complex, ecological conflicts. This study focuses on the development of processes and tools that facilitate multi party consensus building. It suggests that the complex features of multilateral negotiations provide opportunities for inclusive, transparent and flexible responses to ecological conflicts. Practical benefits include capacity building, partnerships and strategic adaptations. The challenge of this form of conflict resolution is to increase high power contributions to the sustainability of low power subsystems. This approach to conflict resolution recognises that the security of the global ecological system is related to the resilience of each subsystem within the system as a whole.

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Towards a Next-Generation Swedish Climate Policy

by Glenn S. Hodes and Francis X. Johnson***

As the scientific evidence for human-induced climate change has mounted and the potential impacts of climate change on vulnerable regions has become more clear, many countries have been refining their climate policies. Sweden is in the midst of developing a "next-generation" climate policy. This policy shift will have strong implications for Swedish industry, and potentially equally important implications for Swedish foreign investment and development policy. As an environmentally influential country, Sweden's new course may also carry considerable implications for global climate protection efforts.

But what exactly is meant by the term *"next-generation"* when used to describe a climate policy? First, it implies that Sweden has engaged in a comprehensive review of climate change as a major national policy issue once before. Indeed, Sweden has already adopted measures aimed at controlling its greenhouse gas (GHG) emissions and has supported a significant number of climate mitigation projects at home and abroad. Second, it suggests that climate policy has risen in priority, in light of the growing scientific consensus that global climate change presents the most serious environmental threat of the 21st century. And finally, it alludes to the influence of global trends and foreign policy innovations on the moulding of a new domestic policy. Some of the distinguishing features embodied in a next-generation climate policy include:

- A shift away from a reactionary, "wait-and-see" approach, driven by the outcomes of international climate negotiations, toward the parallel pursuit of strong domestic legislation and proactive stances in support of a robust international policy regime.
- A shift away from reliance on a single, or a relatively sparse set of approaches for limiting GHG emissions (e.g. heavy taxation, voluntary agreements) toward a plurality of policy instruments and programmes so as to test the effectiveness of different approaches while also aiming for the broad structural changes that are needed.
- A shift away from traditional regulatory and environmental enforcement mechanisms, toward greater experimentation with and use of economic incentive structures and market-based instruments to limit GHG emissions and broaden industry participation.
- A shift away from exclusive focus on domestic measures, toward promotion of international collaboration and cross-border investment.

Swedish environmental regulation and policy, as in much of Europe, has until recently been driven by a top-down, state-centred approach. Yet it has become clear that conventional regulatory instruments cannot effectively address diffuse and/or global environmental problems. Indeed, some analysts see the shift to market-based instruments as a by-product of the "New Economy," in which new ideas, commodities, and technologies are disseminated at unprecedented speed. At the same time, this new economy operates within a growing world population that is increasingly constrained by natural resources. Market-driven environmental policy is expected to reduce the costs of meeting environmental goals while stimulating technological innovation and enhancing co-operation between government and industry. Some analysts regard the ability of nascent markets for GHG emission trading as the quintessential test case for corroborating these tenets (Yergin and Stanislaw 1998: 361-2).

The international climate regime

The historic UNCED "Earth Summit" in Rio de Janeiro in 1992 gave birth to the United Nations Framework Convention on Climate Change (UNFCCC), which was ultimately ratified two years later. The objective articulated by the Convention is to stabilise GHG concentrations at levels that would prevent dangerous human interference with the global climate system. It also set out a system of "common but differentiated" responsibilities among the parties, albeit somewhat ambiguously. The Convention acknowledges the importance of concerted and co-ordinated global action on climate change, while maintaining that industrialised countries (referred to as Annex I countries) should bear the primary responsibility for greenhouse gas mitigation. The UNFCCC also introduced the concept of joint implementation, or cost-effective, collaborative miti-

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gation efforts undertaken between two different countries, as opposed to within their own borders.

KYOTO PROTOCOL

The real "teeth" of the UN Climate Convention are embedded in the Kyoto Protocol, which was laid out five years later, in December 1997. Drafted at the third UN Conference of the Parties (COP), the Kyoto Protocol established a common framework and a timetable for 38 developed countries to limit their GHG emissions under a treaty that would be legally binding upon ratification. The reductions are expressed as percentages of the 1990 baseline emissions for each country. The Protocol will enter into force after at least 55 Parties to the Convention, accounting for at least 55% of the total carbon dioxide emissions for 1990 from Annex I countries, have deposited their instruments of ratification, acceptance, approval or accession. While the Kyoto Protocol offers a "blueprint" of the international climate regime, key aspects remain essentially under continual negotiation and construction. Of considerable importance for Swedish climate policy in the Kyoto (and post-Kyoto) process is the final elaboration of the flexibility mechanisms, which are based upon the initial concept of joint implementation unveiled in Rio.

THE FLEXIBILITY MECHANISMS

Unlike the Montreal Protocol on ozone depletion, Kyoto presented a more difficult challenge to policymakers due to the broader number of industries and stakeholders affected, as well as the higher expected economic costs of GHG mitigation. To address these challenges, the parties developed the three flexibility mechanisms: International Emissions Trading (IET), Joint Implementation (JI), and the Clean Development Mechanism (CDM). These three options allow Annex I countries to achieve their emission reduction targets through co-operative mitigation actions and market-based mechanisms.

Under International Emissions Trading (IET), GHG emission reductions achieved over and above a country's required commitment—its Kyoto emissions 'cap'—can be openly bought and sold. However, such trading would only be permitted among industrialised (Annex I) countries, which are assumed to have the GHG monitoring systems in place for tracking and auditing transfers of emission quotas (known as "assigned amounts" or AAUs). Several countries are developing *domestic* emissions trading schemes along the same basic principles but with two companies or organisations trading in emission rights, allowing for later harmonisation with IET.

Joint Implementation (JI) and the Clean Development Mechanism (CDM) are more project-based. Joint Implementation (JI) is covered under Article 6 of the Kyoto Protocol and—as with IET—can *only* be carried out by parties (whether private companies, NGOs, or public sector entities) based in Annex I countries. Emission reductions created through JI projects are called Emission Reduction Units (ERUs), equal to one metric tonne of CO_2-equivalent GHG emissions. Since both parties in a JI project are subject to a national emissions cap or regulation in support of that target, the desire to claim a portion of the ERUs will generally be mutual. In addition, one or both of the countries participating in JI may have the additional flexibility of using ERUs in a domestic emissions trading scheme. ERUs *cannot* be "banked" for later use in the first commitment period (i.e. from 2008 forward).

Article 12 of the Kyoto Protocol established a Clean Development Mechanism (CDM), whose objective is similar to JI, but is directed at developing countries that are *not* subject to emission reduction commitments (UNFCCC Annex II parties). The CDM is intended to promote "green" investment and technology transfer from developed to developing countries through GHG mitigation projects. Some or all of the CDM emission credits (Certified Emission Reductions-CERs) will accrue to the Annex I countries that sponsor the projects. The CDM is not only a way to achieve global GHG abatement more cost-effectively, but also a means to promote sustainable development and more meaningful participation of all countries in an international climate regime.

RATIONALE AND BENEFITS OF THE FLEXIBILITY MECHANISMS

The integration of the flexibility mechanisms into the design of the Kyoto Protocol is premised on both theoretical economic assumptions and historical experience. Emissions trading can lower the cost of reducing emissions, accelerate commercialisation of cleaner energy and production technologies, and create incentives for parties to go beyond the Kyoto compliance targets. The experience from programmes in the US, such as sulphur dioxide (SO2) and nitrogen oxides (NOx) trading programmes have provided tentative empirical support for these arguments.

The flexibility mechanisms are also rooted in theoretical microeconomic principles on gains from trade, comparative advantage, and the logic that emissions should be progressively reduced where marginal abatement cost (i.e. the price of reducing or sequestering an incremental tonne of GHG emissions) is least. Since climate change is linked to the accumula-

tion of GHG emissions in the earth's atmosphere, in the context of mitigation efforts, it does not matter where these uniformly mixed pollutants are reduced. A synthesis report assessed over a dozen leading macroeconomic models, and found that free and broad use of the flexibility mechanisms could reduce the global price tag for combating climate change by a factor of ten or more (Weyant 2000: 11).

	SWE	NOR	DK	UK.	NL	CH	USA	AUS	NZL
Voluntary GHG Emission Reduction Programs	C	C		I	I	I	I	I	I
Negotiated Voluntary Agreements with Industry	C		I	D	I			C	C
Domestic/ Regional Emissions Trading	C	C	I	I	C	D	C	D	C
CO_2 Tax/ Climate Change Levy	I	I	I	C	C	C			C
JI/CDM Trade and Investment Office				I	I	D			
Robust AIJ Program	I	I	I		I	I	I	I	
Energy Efficiency Subsidies	I	I	I	I	I		I	I	I
Landfill/ Methane Gas Tax	I	I	I	I	I			C	C
Renewable Portfolio Standard			D	I	C	C		I	
Phase-out of Industrial GHGs	C	D	D						

Table 1: Summary of National Climate Policies as of 2000
(I=policy under implementation; D=policy under development; C=policy under consideration)

LESSONS FROM EUROPEAN AND INTERNATIONAL EXPERIENCES

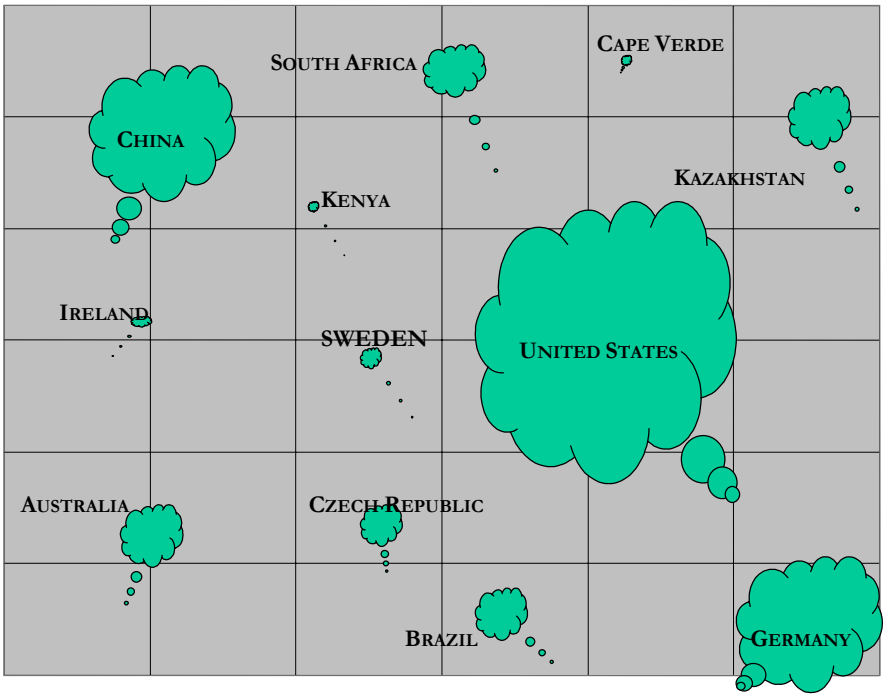
A number of countries (Table 1) have been broadening their climate policy portfolio to include carbons taxes, emissions trading schemes, subsidies for energy efficiency, and other programmes and measures. There has also been a remarkable shift in the attitudes of private corporations toward climate change, particularly large multi-nationals. Increasing numbers have cast off formerly cautionary or even sceptical attitudes in favour of advancing innovative GHG emission reduction strategies. The change in attitudes is reflected in increasing interest around the world in Negotiated Voluntary Agreements with different industries on GHG reduction targets and timetables.

Backdrop to Swedish climate policy

Sweden's GHG emissions are small from a global perspective—accounting for about .025% of total global carbon dioxide emissions—less than many rapidly developing nations that do not have emission reduction commitments (Figure 1). Sweden's *per capita* carbon dioxide emissions (6.0 tonnes/capita) are below the global average (7.0), the OECD average (11.2), and the European Union average (8.6) (Energimyndigheten 1999a). Similar standing holds true for CO_2 emissions per unit of GNP. Since 80% of Sweden's GHG emissions are attributed to carbon dioxide, these numbers are also indicative for aggregate GHG emissions. Despite its above average standing, Sweden has been proactive on climate protection and a keen supporter of the UNFCCC (Collier and Löfstedt 1997: 30).

As a member of the EU, Sweden is bound to its collective or "bubbled" emission reduction target of 8%. Given Sweden's past improvements, and the recent closure of a large nuclear power plant, it was allowed to cap its emissions at 104% of 1990 levels in the period 2008-2012, as part of the EU burden-sharing agreement. This corresponds to 368 million tonnes of CO_2-equivalent emissions during the five-year period, or an average of 73.6 million tonnes per year. From the vantage point of when Sweden signed the UNFCCC in 1992, it was off to a terrific start. As a result of a massive oil substitution programme, energy efficiency programmes, and a dramatic expansion of nuclear power that started in the 1970s, CO_2 emissions in the energy sector dropped by 40% between 1970 and 1990 (Collier and Löfstedt 1997: 30). From today's vantage point, however, the scope for GHG reductions looks much more challenging. Increasing electricity demand, the planned nuclear phase-out, and the continuing growth in transport sector emissions are among the trends that suggest that it will become increasingly difficult and costly for Sweden to further reduce its GHG emissions. Indeed,

Figure 1: Share of World Carbon Dioxide Emissions in Selected Countries



BASED ON PERCENTAGE OF 1996 TOTAL WORLD EMISSIONS. SOURCE: UNDP HUMAN

one of the central arguments of this article is that Sweden can ill afford to rest on its laurels in the near-term if it hopes to remain on track in the medium and long-term horizon.

STRUCTURAL CHANGES

Like many developed countries, Sweden has undergone a post-war transition from a manufacturing economy to a service-based economy, with the service sector now representing over two thirds of its GDP. Manufacturing accounts for about 22% of GDP, agriculture and forestry account for 3%, and the remainder (about 8%) is from non-manufacturing industries. The shift away from manufacturing has contributed to the declining share of energy consumption in industry, while rapid growth in services has led to significant increases in commercial sector electricity consumption. This has had little effect on GHG emissions, however, since the electricity mix remains dominated by hydro and nuclear, The situation could change if the planned nuclear phase-out leads to construction of gas-fired power plants.

Compared to other industrialised countries, the cost of additional emission reductions in Sweden is quite high. The marginal cost of GHG abatement in Sweden is typically several times higher than in the United States, and an entire order of magnitude higher than in many developing countries. Furthermore, and to its credit, the opportunities to implement new low-cost energy efficiency and conservation measures, particularly in the residential sector, have dwindled as a result of previous efforts. Consequently, international efforts through the Flexibility Mechanisms will only increase in importance in Sweden's long-term GHG mitigation portfolio.

CARBON BURDEN

As of 1998, over 90% of Sweden's carbon emissions originated in the energy sector (as opposed to process, materials, or land-based sources). The division among major sectors, given in Table 2, reveals that the transport sector is not only the major contributor, but has experienced the most growth since 1990. The energy production sector ahs also experienced a significant increase, due mainly to increased production at refineries and changes in the fuel mix stemming from decreased use of (zero-carbon) electricity for heat and power production. Industry and heating have experienced significant declines over this period, due mainly to efficiency improvements and structural changes. As in most EU countries, the transport sector continues to pose the greatest challenges for carbon emissions reductions.

	Emissions (million tonnes)		Share of total		Change
	1990	1998	1990	1998	(1990-1998)
Energy Production[a]	8.8	9.7	17.1%	18.4%	10.2%
Industry	13.1	12.2	25.5%	23.1%	-6.9%
Transport	18.7	21.1	36.4%	40.0%	12.8%
Heating	10.7	9.6	20.8%	18.2%	-10.3%
Other[b]	0.1	0.1	0.2%	0.2%	0.0%
TOTAL	51.4	52.7			2.6%

Source: UNFCCC database

[a]for refineries, district heating plants, and power production

[b]includes various releases from fuels

Table 2: Carbon dioxide emissions by major energy sector

HISTORICAL DEVELOPMENT OF DOMESTIC CLIMATE POLICY

Sweden's first climate-oriented policy, launched by the *Riksdag* in 1988, was a two-pronged strategy: reorienting the national energy strategy to reduce emissions, while phasing out Sweden's traditional reliance on nuclear power; and introducing a carbon tax to stem increasing demand for fossil fuels. In 1992, the *Riksdag* further legislated a stabilisation of CO_2 emissions to 1990 levels by the year 2000. Although Sweden came close to reaching it, this goal was not attained. This initial climate policy offensive was revamped with the 1993 Swedish Climate Bill.

The carbon tax, initiated in 1991 after several years of delay due to industry protests, has gone through numerous modifications to its rate on various fuels, as well as permissible exemptions. The tax level is approximately 0.38 SEK per kg, or 360 SEK (roughly 38) per tonne of CO_2. Many industries pay about half of that amount, and energy-intensive industries (mainly cement, pulp and paper, iron and steel, and chemicals) pay much less than half (Hanks and Sillen 1999: 8). Some groups have criticised the carbon tax as being too narrow in scope to form the backbone of a holistic climate policy and too marginal in ultimate impact. Others do not consider the tax to be truly oriented toward emission reductions at all (Gallopín and Nilsson 1998: 41). Despite these criticisms, Sweden maintains the highest carbon tax of its kind in the world, in addition to relatively high taxes on petrol.

In 1993, shortly after Sweden's accession to the UNFCCC, the Ministry of Industry commissioned a working group to examine joint implementation and emissions trading. This group recommended that tax rebates be extended to Swedish companies that engaged in joint implementation projects, and that energy-intensive industries should be provided with free initial GHG emissions permits, if Sweden were to move toward a tradable emissions system. The suggestions held little appeal at that time with the Ministry of Environment, and subsequently failed to be implemented (Björk 2000). About this same time, the Nordic Council of Ministers agreed that increased cooperation on energy and environmental issues was necessary, particularly on climate change and transboundary air pollution from Eastern Europe.

SWEDISH AIJ PROGRAMME

The National Board for Industrial and Technical Development (NUTEK) and the Swedish National Energy Administration (STEM), (which assumed NUTEK's energy activities after 1997) has placed special emphasis on Eastern Europe and the Baltic States in its portfolio of energy and climate change mitigation projects. The government's programme on Activities Implemented Jointly (AIJ) grew out of the 1992 Baltic Bill, which funded energy assistance to the newly independent and environmentally downwind states of Latvia, Lithuania, and Estonia. The NUTEK/STEM programme, *Environmentally Adapted Energy Systems (EAES)* initiative, resulted in over 75 projects, of which about two thirds are also UNFCCC registered AIJ projects (Energimyndigheten 1999b).

On the one hand, Sweden has undertaken a very large number of AIJ projects to test the concept of joint implementation (Table 3). On the other hand, both the geographical reach and the type of mitigation activities pursued have been relatively narrow in scope. The vast majority of AIJ projects fall into

three categories: conversion of boilers in district heating plants from heavy fuel oils to biofuels; reduction of heat losses in district heating systems and pipeline networks; and increased end-use energy efficiency. According to STEM, these project activities were selected due to their affordability, low technological risk, sustainability, and relatively short implementation times. Future co-operative climate change projects developed by STEM are likely to focus on a combination of measures to reduce energy use on both the demand and the supply side (Knutsson and Salay 1999: 42).

The parliamentary commissions

The search for new tools to facilitate a more ambitious greenhouse gas mitigation programme started in mid-1999 with the establishment of a "Parliamentary Commission on Swedish Climate Change Policy," headed by the former Minister of Environment and chairman of the Centre Party, Olof Johansson. In keeping with Sweden's political culture of consensus building, all major parties sat on the Commission, which was itself led by a central political figure. The Commission was advised by a group of experts from across the spectrum of government bureaucracy.

Host Country	Number of Projects	Distribution Percentage	Estimated Annual CO_2 Reductions	Estimated Average Accumulative GHG Mitigation Cost (SEK/tonne of CO_2)
Poland	1	1%	2,200	50
Lithuania	9	14%	62,750	70
Latria	22	33%	85,875	130
Estonia	21	32%	100,260	150
Russian Federation	13	20%	34,045	160
Mitigation Strategy				
Boiler Fuel Conversion	27	41%	562,500	60
Combined Mitigation Strategies	13	20%	184,400	80
District Heating Distribution	15	23%	58,720	130
End-Use Energy Efficiency	11	16%	4,840	400

Table 3: Swedish EAES/AIJ Program: Project distribution and summary statistics

Parallel to the Parliamentary Climate Commission, another high profile—if somewhat less politicised—parliamentary inquiry was established, chaired by Kjell Jansson, head of the Swedish Board of Customs and former Secretary of State for the Ministry of Environment and Director General of the National Electric Power Grid Agency. This "Commission on the Flexibility Mechanisms" was charged with examining the potential applications of the Kyoto mechanisms and its linkages to a revamped Swedish climate policy. Although technically a one-man Commission, fifteen apolitical experts and bureaucrats were also involved in its development.

The Swedish 'remiss' procedure facilitated a broad review of the Commissions' findings. Comments were solicited from over 125 affected government agencies, non-governmental organisations, firms, and municipalities. Sweden's political culture of "consensus, accommodation, and consideration for others" and its tendency to advocate lengthy, informal lobbying among personal networks rather than openly acrimonious parliamentary debate (Johnson 1998), should work to minimise filibustering and horse trading on the resulting Climate Bill due in Fall 2001.

KEY RECOMMENDATIONS OF THE COMMISSIONS

The Parliamentary Climate Commission urged an acceleration of a variety of educational, economic, and administrative policy measures to "step up…the transition to a climatically sustainable society (Government of Sweden 2000a: 5)." The Commission envisions that altogether Sweden must spend about SEK 11 billion (□ 1.3 billion) on a base package of policies and measures before 2010 to achieve more rapid progress on the goals outlined in its strategy. A large portion of these funds would come from a slight increase in taxes on electricity. The measures in the base package include information campaigns, local climate programmes, inter-modal subsidies to rail for cargo transport, changes in public procurement, and policies to phase out the three industrial greenhouse gases. However, according to current

estimates, these initial actions may not actually deliver a reduction in CO_2 emission levels, but rather merely reverse its upwardly pointing trend line.

A *supplemental* package of measures proposed for implementation—following increased information on the results of the base package—is actually expected to start to decrease Sweden's net GHG emissions. Rather astonishingly, key actions that can bring real GHG reductions (including emissions trading, use of the flexibility mechanisms, carbon sequestration projects, and higher energy/carbon tax rates) are all measures that form part of the supplemental package.

The (Jansson) Commission on the Use of the Flexibility Mechanisms endorsed Sweden's greater utilisation of the Kyoto mechanisms, and somewhat boldly recommended that the current carbon taxation system be replaced entirely with an emissions trading scheme integrated with those of other nations. It further concluded that a domestic emissions trading system should incorporate at least 80% of total GHG emissions in 1998, rising to 90% in the longer term. The likely gains from a unilateral emissions trading scheme, Jansson conceded, were too small to seriously contemplate; therefore, diplomatic efforts should be accelerated to harmonise a trading scheme "with [Sweden's] neighbouring countries and parts of the EU (Government of Sweden 2000b)." Although the (Jansson) Report recommended pursuing an integrated trading system as formulated by the European Commission, "as a point of departure," a window was left open for a pilot emissions trading scheme to emerge solely among the Nordic countries, with the possible inclusion of the Baltic States and other interested parties, should an EU scheme fail to materialise.

Main Recommendations of Parliamentary Climate Commission

- Total national GHG emissions for 2008-12 should decrease by 2% relative to 1990 levels (a 6% increase over and above Sweden's reduction target mandated by the Kyoto Protocol).
- Aggregate GHG emissions should be stabilised by 2005, and halved by 2050, based on 1990 *per capita* levels.
- "Considerable" emission reductions should take place domestically, as too great of a reliance on international measures may adversely effect other Swedish environmental objectives.
- A National Climate Council should be established, with the same status as a government agency, and existing levels of co-ordination on climate policy among government bodies and authorities should be strengthened.
- Sweden should be a driving force in international efforts to achieve sustainable reductions in global GHG emissions.

Main Recommendations of Commission on the Use of the Flexibility Mechanisms

- A tradable quota system should phase out carbon tax and regulation under the Environmental Code requiring plants to use best available control technology. Industries currently exempt from carbon taxes should remain outside the quota system for the first Kyoto commitment period.
- Emissions permits should be auctioned—even though this may require financial compensation to industries previously given operating permits that may implicitly cover their GHG emissions.
- A domestic emissions trading program should be introduced prior to the first Kyoto budget period (2008-12), roughly around 2005, with earnest preparations for its implementation launched immediately following ratification of the Kyoto Protocol.
- Emissions quota trading with other countries and use of the flexibility mechanisms are to be explicitly permitted, if not encouraged.
- A domestic emissions trading program should be linked to a larger EU trading scheme, currently under development. Sweden should advocate for a broader scope of EU emissions trading to encompass "aspirant" states and upstream emissions sources.
- Emission reductions obtained from carbon sequestration and other sink absorption should not be included in the first round of the programme.
- Sweden should heed, but not exert efforts to exceed, any international restrictions placed on the use of the flexibility mechanisms—the "supplementarity" principle.

CRITIQUE OF THE PARLIAMENTARY COMMISSIONS

There are some contradictions between the two Parliamentary inquiries, particularly in their tone on the role of the flexibility mechanisms in a next-generation Swedish climate policy. While the Parliamentary Climate Commission's recommendations are less sanguine in the near-term on emissions trading and the flexibility mechanisms, the Jansson report, in essence, endorses early utilisation of them. Despite these differences, the Parliamentary Climate Commission supports the introduction of a EU emissions trading system—possibly including Norway and East Central Europe—before 2005 (Government of Sweden 2000a: 24-25). Asserting that Sweden should be a "driving force" behind international GHG mitigation efforts, it advocates increased financial support for the Clean Development Mechanism. However, the Commission proposed only a modest increase of SEK 100 million toward CDM project development, over and above Sweden's contribution to the World Bank Prototype Carbon Fund.

The Commission's base package of measures focused too much on "top-down" regulatory instruments and state-centred conservation initiatives. It should be remembered that the public sector's share of total

CO_2 emissions in Sweden is estimated to be only 4% (Östblom 1996: 10). The scope for industry involvement and industry-driven instruments in the basic package is rather limited. Indeed, a number of the most cost-effective and innovative GHG mitigation measures have been reserved for subsequent use in the supplemental package; however, aggressive implementation of these measures may be pushed off by several years at least. Such delays could prove to be a risky gamble if Sweden hopes to achieve a more ambitious emission reduction target before the first Kyoto period, without resorting to increasing carbon taxes or deferring, once again, the decommissioning of additional nuclear power plants.

The recommendations of the Parliamentary Commission on the Flexibility Mechanisms were, for the most part, sound and sensible. A greater degree of certainty is afforded by the ability to limit an overall level of emissions with a tradable permit system, since it focuses on controlling emission *quantities*, rather than a system of taxation, which is thrust at controlling fuel *prices* that, in turn, may have an influence on emission volumes. Sweden's carbon taxes were subject to numerous adjustments and loopholes over the years, rendering its effect on climate policy ambiguous. Many analysts and environmentalists perceived the tax as just another fiscal policy instrument, and not enough of a burden to stimulate wise changes in energy use (Boström and Salay 2000). Overall, the political feasibility of tradable emissions permits is greater than the carbon tax, given the industry view and the effect of increased taxation on economic growth.

While there are multiple advantages of moving toward a domestic emissions trading scheme, there would also be considerable up-front costs. A registration system or electronic database, and an environmental monitoring and compliance system would need to be developed. Yet in light of proposed Swedish expenditures on climate policy, these challenges hardly seem insurmountable. While allowance trading will provide better incentives than the current taxation scheme, companies and administrators alike must receive extensive training if they are to master a new system of regulation (Ewerstein and Riydehell 2000). Indeed, the majority of the costs will revolve around the need to reorient administrators and the private sector toward a new set of rules.

The Commission may also have been overly sanguine on the benefits of a EU emissions trading scheme. For one, the sectoral and geographical coverage is fairly limited. The EU proposal covers only carbon dioxide emissions from major industrial point sources in six sectors. As the Jansson report notes, an emissions trading system is only as efficient as the depth of its sectoral and geographical coverage. Secondly, cross-country differences in marginal GHG abatement costs are relatively insignificant and may be absorbed relatively quickly (Kuik 2000: 47). Third, the proposed EU trading scheme is also premised on a "downstream" emissions quota approach that targets the plants and sources that emit greenhouse gases. The Jansson Report advocates an "upstream" approach, where permits are given at the production stage, which would be more consistent with imposition of the current carbon tax.

A Nordic emissions trading pilot scheme could be more advantageous for Sweden than a EU scheme, at least in the near-term. Sweden's lack of political control over timing, geographical scope, and sources covered in an EU scheme could threaten its ability to meet an ambitious emissions reduction target (Government of Sweden 2000b: §2.5). Sweden may not be able to maintain sovereignty over the determination of its national emissions ceiling (cap) in an integrated EU trading system, but it is likely to have more diplomatic control in a Nordic scheme. A simulation of a Nordic scheme suggests that Sweden could reduce its mitigation costs by 25%. The efficiency gains would be much higher if a tradable emission system included countries with more disparate marginal abatement costs, such as the Baltic States and the Visegrad states of Eastern Europe (Bohm 1997).

The Jansson Report's recommendation for increasing Sweden's use of the flexibility mechanisms makes economic and environmental sense. However, the Jansson Commission was vague concerning exactly *how* it would bring JI and CDM into a Swedish emissions trading system. It is only mentioned that a monitoring, verification, and licensing body be created for granting emission reduction credits. It is possible that this body may delegate certain responsibilities to other actors, such as accredited auditing firms (Government of Sweden 2000b: §2.9). If the Swedish government plans to delegate the role of emissions quota trading to private firms, then it would be reasonable to consider giving industry primary responsibility for acquiring and trading emission credits through JI and CDM. Neither Commission put forward any detailed recommendations, however, as to how such a new shift in the program's emphasis could be catalysed.

Other policy measures

The lack of more specific action-oriented international programmes in the proposals put forth by the

Commissions means that a next-generation climate policy portfolio will need to complemented by strengthening existing energy-climate policies or pursuing related initiatives in other sectors. Measures such as those outlined below are already (or likely will be) part of the broader energy-climate policy package, although some modification of priorities is needed in some cases.

SUPPORT FOR MULTILATERAL INITIATIVES

In addition to bilateral climate change projects, Sweden has committed resources to multilateral initiatives. Following on policy co-ordination and research with the Nordic Council of Ministers on climate strategies, Sweden will collaborate with the Nordic countries to create a new investment fund in joint implementation activities in the Baltic States and Russia. Bilateral and regional co-operation on research and development and institution building for JI and emissions trading across the Baltic States and Eastern Europe is also planned for the current period up to 2004 (Knutsson and Salay 1999: 42). A Nordic multilateral investment model should prove beneficial to Sweden in the sharing of knowledge and experience, on the one hand, and the sharing of management costs and project risks, on the other hand. As one of the initial investors in the Prototype Carbon Fund, Sweden's early exposure to the functioning of a multilateral investment fund for carbon offsets should prove advantageous in the design of a Nordic carbon investment fund. As low-cost or "no regrets" projects in the Baltic States become closer to being exhausted, Sweden will be compelled to examine other potential JI/CDM host countries.

LOCAL INITIATIVES

Climate change is a logical focal point for Local Agenda 21 policies. Local authorities have considerable autonomy and influence over policy and planning in a number of areas fundamental to GHG emission control efforts. Many Swedish municipalities own local energy generation or distribution companies, often linked to municipally owned or managed district-heating plants supplying residential heat and hot water (Collier and Löfstedt 1997: 26-28). The fact that some of these companies may make a profit provides an additional incentive for adopting further energy efficiency measures. Swedish municipalities have been particularly active in expanding the use of biomass fuels (Collier and Löfstedt 1997: 32).

To encourage local municipalities to identify new strategies for reducing GHG emissions, the NGO Swedish Society for Nature Conservation initiated a "Challenging Communities" initiative in 1997. Five municipalities are currently participating: A number of cities in Sweden have also signed on to the Cities for Climate Change Protection programme sponsored by the International Council of Local Environmental Initiatives. It is important to note, however, that many GHG emission abatement opportunities have already been successfully carried out at the local level, especially in housing standards and district heating plants. Consequently, near-term opportunities will be more costly or even inappropriate, so that the heavy focus on district heating and residential sector energy efficiency in the Swedish Climate Commission recommendations appears to be misplaced.

RESEARCH AND DEVELOPMENT

Sweden has a rich tradition supporting research and development (R&D) into alternative energy technologies. As a percentage of GDP, Sweden typically spends almost double the amount on R&D than the US or Japan. Of the total R&D budget, about 5.5% is earmarked toward new energy technologies (Roos 1998: 38). In February 2000, STEM also commenced a SEK 30 million, three-year research project that focuses on reducing emissions from biofuels, given its potential for providing an increased share of Sweden's energy needs (Reuters 2000). The emission reduction potential of these technologies could make an important contribution to Swedish climate policy, and may be particularly attractive in terms of technology transfer to developing countries through the CDM.

VOLUNTARY AGREEMENTS

One of the challenging aspects of designing a next-generation climate policy is the political weight of energy-intensive industries, which might migrate production to less environmentally conscious countries in order to avoid stricter emissions laws or targets. The Parliamentary Climate Commission did not ignore these sensitive industries as a target for new policy measures altogether. But measures specifically targeted toward industry account for only SEK 520 million (less than 5%) of the total package of SEK 11 billion (Government of Sweden 2000a: 40). These are largely in the form of subsidies to undertake energy savings measures untied to quantified emission reduction targets or pledges. In the same vein, the Jansson report recommends that the energy-intensive industries continue to be exempt from both carbon taxes and inclusion in a domestic emissions trading system until 2008. The government hopes such industries begin to take GHG emissions into account in new investment decisions as early as 2005 (Carlsson 2000). On the other hand, the contribution of these indus-

tries to Swedish GHG emissions is significant. One option could be for the government to enter into negotiated agreements with such industries, allowing flexibility in achieving targeted reductions.

Voluntary agreements and reduction targets need not be unilaterally up to the discretion of industry. An innovative form of voluntary agreement coming into vogue in Europe is the *negotiated environmental agreement*. A negotiated environmental agreement explicitly sets a performance target to be achieved within a specified timeframe. While neither party is legally *obligated* to enter into the agreement, this does not preclude the option of imposing sanctions if the target has not been met in the specified timeframe. One of the main advantages of a negotiated agreement is their versatility and ability to be changed more easily than direct regulation. The processes of negotiation can increase awareness of environmental issues and mutual responsibility for them. They can also bring about effective measures by industry prior to regulation and are potentially more cost-effective than traditional regulatory actions. One of the most significant agreements of this kind is that reached at the European level with the auto manufacturers, who have pledged to reduce carbon dioxide emissions from passenger cars by 25% by 2008 (Energimyndigheten 2001).

Renewable energy

Although Sweden has made significant R&D investments in renewable and alternative energy technologies, a combination of economic realities and weak fiscal and other policy measures has contributed to difficulties in moving such advances from the lab to market. Unlike the UK, which adopted the Non-Fossil Fuel Obligation (NFFO) to guarantee that a certain percentage of all Purchasing Power Agreements include energy from renewable or alternative fuels, the Swedish electricity market has no such policy. In some domains, such as district heating, tax incentives are a major market driver for renewables, but other sectors lack similar driving forces.

Biofuels for district heating, combined heat and power (CHP) and for home heating have seen the most development among all renewable options. The biofuel industry in Sweden has been aided by the fact that district heating plants pay both energy and climate taxes for fossil fuels. The district heating facilities of 200 of 250 communities in Sweden are run at least in part on biofuels, which supply about half of Sweden's district heating energy needs (Energimyndigheten 1999a). Nonetheless, almost 25% of total energy supplied for district heating in Sweden is still produced with fossil fuels, mainly oil and coal (Energimyndigheten 1999a). The Climate Commission proposes to use over a billion Swedish crowns to replace about 4 TWh of energy from fossil fuels in district heating plants with energy generated from biofuels.

Other small-scale renewable energy technologies, such as wind and solarPV, are subsidised in Sweden, but still cannot compete with the low cost of nuclear energy and hydropower (Industriforbundet 2000). This, in turn, has dissuaded investors from making more significant investments in new renewable energy capacity. The Parliamentary Climate Commission recommended greater investments in support of wind power and set a goal to generate 3-5 TWh by 2010—a ten-fold increase (Government of Sweden 2000a: 7). Yet the cost of wind power generation averages 25 Swedish öre per kWh, or about 25% higher than current prices of electricity from nuclear and hydropower (Björk, Olle 2000). EU supply liberalisation and renewable certificate programmes could help to offset some of this price difference in the future, given that some consumers are willing to pay more for "green" electricity.

Carbon sequestration and land-use changes

Carbon sequestration activities could quite logically form another pillar of a next-generation Swedish climate policy. In addition to the low fossil-fuel content of its electricity production, Sweden's GHG emissions profile is boosted by a massive carbon reservoir—tentatively estimated at 3 billion tonnes of CO_2 (OECD 1996). In fact, 62% of Sweden's total land area is forest, about two thirds of which is used for productive purposes (Government of Sweden 1997: 8). Sweden and Finland are the only two EU nations whose forests could possibly absorb more than 100% of their national CO_2 emissions, according to a EU report released in November 2000. The integration of carbon sequestration and forestry activities into a new Swedish climate policy has been actively supported by Sweden's leading forestry organisation, *Skogsindustrierna* (Reuters 2001).

In a project supported by the Swedish Foundation for Strategic Environmental Research (MISTRA), the Swedish University of Agricultural Science is investigating the potential to sequester increased levels of carbon dioxide in various land-use and forest management schemes. Among the specific options to be analysed include harvesting an increased amount of biomass fuels, and changing the tree species that are planted and felled (MISTRA 2000). The results of this study, and other related carbon sink opportuni-

ties should be followed closely, and new sequestration policies and projects could be adopted to maximise the rate of carbon sequestration in Swedish forests and agricultural lands.

Conclusions

The paramount challenge facing Swedish policymakers in designing a "next-generation" climate policy is to undertake actions that will generate substantial emission reductions in Sweden, while at the same time integrating favourable opportunities opening up through the Flexibility Mechanisms of the Kyoto Protocol into its domestic policies. Demonstrating that deep cuts in GHG emissions can be achieved in a highly industrialised and export-dependent country would lend Sweden some degree of authority in international negotiations. But it is also the case that Sweden's relatively low share of world GHG emissions necessitates a more proactive international stance and commitment to bilateral and multilateral action in order for Sweden to claim globally significant environmental gains toward climate protection.

Epilogue: The new Climate Bill

Shortly before the publication deadline for these Proceedings, the Swedish Climate Bill was put forward in the Parliament. A brief summary of the basic elements of the legislation is as follows:

- Sweden will ratify Kyoto in early 2002
- Sweden will reduce GHG emissions by 4% by 2010 (relative to 1990)
- No reliance on international credits
- No reliance on sinks
- Significant investment (about 1 billion SEK) in regional and community programmes
- Improved co-operation with industry
- New strategy shall be developed to expand alternative fuels for transport
- Real estate (building) management shall emphasise energy efficiency
- Continuation and possible extension of CO2 taxes
- Green certificates to be used to create new markets for renewables in the electricity sector
- Progress on targets to be evaluated in 2004 and 2008 and adjustments made as needed

The most remarkable aspect of the legislation is its "inward-looking" posture in terms of insisting that reductions be accomplished domestically and assuming that community programmes and energy efficiency, which have already been extensively developed, can continue to yield the same type of results. The continued heavy reliance on carbon taxes and other domestic initiatives seems to be inconsistent with the "next-generation" approach that was put forth in this article and to which many other countries are moving. On the other hand, the emphasis on regional programmes and alternative fuels should hopefully address problems in the transport sector, which has been the most intractable in terms of stopping the growth trajectory. The green certificates programme is among the more progressive and forward-looking elements of the legislation, given that renewables markets will need such stimulation.

Current trends suggest that it will be very difficult and costly to reach a 4% reduction (an 8% reduction over Kyoto compliance) target domestically. The heavy emphasis on domestic measures also reduces the likelihood that the nuclear phase-out would continue as planned for 2010. The politically-driven domestic agenda reflected in the legislation appears short-sighted and seems unlikely to be sustainable or desirable, particularly with EU enlargement and EU energy market liberalisation both looming high on the agenda during this same period.

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International Environmental Co-operation, the US Presidency and Global Climate Change

*by Glen Sussman**

Given the number of influences on nation-states, achieving bilateral and multilateral environmental co-operation is a difficult task. Divisive conflicts can occur over the protection of national interests, domestic constraints on international co-operation, and the acquisition of sound scientific data to provide a basis for promoting environmental agreements. Yet nation-states have been able to overcome a variety of obstacles and have joined together in numerous agreements to address common environmental problems. Despite the influence of a multitude of factors that operate against members of the international community from joining together to pursue common environmental goals, the fact that a variety of international agreements have been signed demonstrates that the environment has achieved an important place on the global agenda.

As the political leader of the United States, the president stands at the centre of both the domestic political arena as well as international politics. While conducting foreign affairs, US presidents have been primarily concerned with issues of national security, trade, and the global economy's impact on employment and the domestic economy. Yet in recent years, the US Department of State (2001) has promoted the principle that the global environment is a fundamental aspect of foreign policy making. As Paul Harris (2001, 34; cf. also his contribution to this volume) has recently stated, environmental problems "require international and even global action if they are to be reduced and mitigated. The world's governments and other important actors cannot deal effectively with environmental changes if the United States does not play an active role. … Thus, environmental changes have become a major subject and feature of US foreign policy." In his study of international environmental governance, Lamont Hempel (1996, 16) notes that since solving "global environmental problems invariably collide with the narrow self-interests of a state-centric system, few nations are prepared to follow the logic of collective environmental action to its political conclusion." Although progress has been made, the participation of the United States and leadership by the US president remains an important consideration.

A few years ago, Oran Young (1997, 7-9) drew attention to the notion of international environmental regimes and the importance of the *international commons* (elements of the global environment that are shared by the world community) and *transboundary externalities* (negative effects imposed on one party by another party). About the same time, Lynton Caldwell (1996, 5-10) was addressing what he called "critical" and "becoming critical" global environmental problems. What these two studies had in common was the inclusion of a contemporary, complex and controversial environmental issue—namely, global climate change (also known as global warming). For Young, global climate change is part of the international commons and at the same time an outcome of the actions of some countries affecting other members of the global community. For Caldwell, global warming is an international issue that is "becoming" critical.

During the twentieth century, delegates from countries around the world have come together to discuss, debate, and formalise agreements about regional and international issues in general and the environment in particular. Among these issues is global climate change. Much debate has occurred about this global environmental issue with primary focus on the cause(s) of this climatic phenomenon that has made it difficult to obtain international co-operation in an effort to achieve an appropriate solution. A variety of factors play a role in the debate over climate change. Nation-states want to maintain control over their actions. Domestic constituencies exert pressure on governments to protect their interests. Moreover, disagreements have centred on the scientific data that is needed to implement policy. Although the Intergovernmental Panel on Climate Change (IPCC) has taken the position that global warming is a threat and international action is needed, some members of the scientific community remain unconvinced (Milloy, 2001, 15A). For example, in recent studies of environmentalism, one view suggests that environmental quality will continue to deteriorate because science has been underutilised by public officials while others argue that science can play a useful role in the policy making process if it is used in an appropriate way (Caldwell, 1992; Kai, 1993).

The study reported here focuses on international co-

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operation, the US presidency, and the global environment. Global climate change is a transboundary environmental issue with cross-national impact. In our examination of the politics involved with this issue, we will assess two recent US presidents—George H.W. Bush and Bill Clinton—and the role each played as leader of the pre-eminent nation-state in co-operating with other states to address a common environmental threat—namely, global warming. We focus on these two presidents because, in the words of one observer, "climate change was the last of the four major atmospheric problems to be the subject of international talks aimed at the creation of a regime" (Soroos, 1997, 176) and in 1988 (the year that George H. W. Bush was elected president) the World Conference on the Changing Atmosphere (the Toronto Conference) called for reductions in CO_2 emissions (Betsill, 2000). As a result, the Bush and Clinton administrations were directly involved in the international global climate change debate. We will then analyse President George W. Bush and global climate change in terms of the global/national dichotomy in an effort to better understand the role of domestic influences, the impact of global participation/non-participation by the United States, and the difficulties in achieving effective international environmental management. The two research questions guiding this analysis are: 1) if the US president offers leadership, does it bolster multilateral efforts to address global environmental issues? 2) if a president practices delaying tactics or refuses to cooperage with global partners, does it weaken the overall effort to foster global environmental governance?

Prior to addressing these questions, we will first provide some background on international co-operation, the role of the US president as chief diplomat, and the science of global climate change. We will then turn our attention to the three presidents.

International co-operation

In order to bring resolution to common international problems, a variety of political actors and practices are involved. Regional and international conferences provide a forum for debate and discussion leading to formal agreements on the part of participating states. International organisations are important players in developing environmental regimes yet debate continues over their effectiveness. Nongovernmental organisations (NGOs) have proliferated on the global scene as yet another crucial participant in international policy making.

Over the years, countries have become signatories to many regional and international agreements. Although they formally make commitments to international agreements, implementation and enforcement usually occurs at the state level. Observers of the process argue that "Many factors influence the effectiveness of international environmental accords, but implementation is the central process that turns commitments into action" (Victor, Raustiala, Skolnikoff, 1998, 15). Herein lies the rub. What role does the United States play? To what extent is the national implementation process effective? Do all states have the capacity to effectively implement commitments made in agreements? Should countries provide assistance to others that are willing but financially unable to meet their commitments?

International governmental organisations have assumed a prominent place in global politics, particularly in recent years (Cox and Jacobson, 1974; Jacobson, 1979). At issue is the question of the effective management of the global commons. What is required is that regional or international organisations have binding power on members and the ability to "monitor and enforce compliance" despite the fact that national "governments are normally reluctant to surrender jurisdiction" (Wijkman, 1992, 541). At the same time, more countries have accepted some limitations on national sovereignty in order to support environmental protection (Haas with Sundgren, 1993).

Nongovernmental organisations have also become an important element in international environmental policy making. As "interest" groups that provide information, mobilise citizens, and pressure governments, NGOs have added to the discussion of transboundary environmental policy. Essentially, if "states are the most important actors in world politics," then NGOs focus much of their efforts on influencing states and the state system (Wapner, 2000, 1994).

It is within this international framework that the US president must function. We now turn our attention to the president as the nation's chief diplomat and an overview of the role played by the president in international environmental policy making.

Theoretic framework: The US president and US leadership

The US president represents the US public both at home and abroad. The Constitutional authority for presidential power is found in Article II that outlines the responsibilities and functions of the presidency. However, over time, some occupants of the White House have used interpretative power to expand upon the authoritative basis of presidential action in

domestic and international affairs. Accordingly, we have seen an expansion of presidential power over the last seven decades vis-à-vis the Congress, although the legislative branch has periodically exhibited an assertive position vis-à-vis the presidency during the period.

In order to assess how the presidency has been involved in global environmental affairs generally, and climate change in particular, we employ *presidential roles* as the theoretic framework for this study. The role approach was first developed by Tatalovich and Daynes (1984) in their work on the presidency in the mid-1980s. A role can be defined as a "set of expectations by political elites and the citizenry that define(s) the scope of presidential responsibilities within a given policy area" (Daynes, Tatalovich, Soden, 1998, 2). According to Daynes and Sussman (2001, 5), roles are an important instrument in evaluating presidential behaviour because:

> decision makers are often inclined to adopt the behavior prescribed and norms sanctioned by the particular role in question. Roles can help to explain why the president succeeds or fails in a particular situation; why a president has an open field in which to operate; or why there is little room in which a president might negotiate with a coalition of interests. A role can also help explain why a president appears assertive or passive in response to social issues.

The five presidential roles include the *opinion/party leader* which links the president to the public; the *legislative leader* that concerns the relationship between the president and the Congress; the *chief executive* that involves the president's relationship with the bureaucracy, staff, appointments and domestic policy making; the *chief diplomat* where the president is concerned with relations with other countries; and the president as *commander-in-chief* of the armed forces of the United States which deals with national security issues.

The underlying strength of each of these roles is found in several variables including the authoritative basis of presidential decision making including the Constitution, federal laws, court decisions, and routine practices over time; the ability to make decisions based upon the number of other political actors which can constrain and pressure presidential decision making; public opinion and organised interests that can support the president or act as veto power on presidential action; presidential expertise, available information, quality of advice, and personal understanding of technical knowledge; and finally, crisis situations that can expand presidential power and discretion. For example, taking the global environment as a case in point, the president has constitutional authority to negotiate with leaders of foreign countries; the president can negotiate agreements but depends on the Senate to ratify treaties; the president can try to influence public opinion through speeches (public opinion can be assessed in terms of its support or opposition to global environmental initiatives) and has an interactive relationship with organised interests that lobby in favour of or in opposition to treaties; presidents differ in terms of their level of expertise and ability to grasp technical knowledge as well as obtaining quality information from their advisors; and finally, environmental crises (pollution, nuclear reactor meltdowns, ozone depletion) can but do not always motivate presidents to take affirmative action.

For the purpose of this study, we are primarily concerned with the *chief diplomat* and *opinion/party* roles. As "chief diplomat" the president is expected to be actively involved with international conferences and the negotiation and implementation of international agreements. In supporting or opposing global environmental initiatives, presidents act as "opinion/party" leader when making speeches about their position on the issue. We can assess how many references to the global environment are made in these national speeches and addresses in comparison to other issues to gain a better understanding of the president's commitment to the global environment in general and global climate change in particular.

International conferences and international agreements

Dating to the end of World War II, representatives from the global community have been involved in international negotiations concerning the global environment. During the period 1972 to 1997, three important international conferences took place that brought together delegates from around the world to promote international co-operation on global environmental issues. The Conference on the Human Environment (also known as the Stockholm Conference) sponsored by the United Nations in 1972 provided a forum for rich and poor nations to discuss, debate, and eventually adopt "A Declaration on the Human Environment" that included one hundred action plans and common principles that helped to foster international co-operation (Haas, 1990, 8; Sale, 1993, 40). The United Nations Conference on Environment and Development that occurred two decades later in 1992 raised expectations about furthering environmental progress on a global level. This Earth Summit that took place in Rio, adopted a common theme and produced several important agreements. "Sustainable Development" became an integrative

mechanism to tie together contemporary and future generations as well as rich and poor countries and was described in detail in Agenda 21 (Johnson, 1993, 62). Delegates concluded the Climate Change Convention and the Biodiversity Convention. Moreover, use of the Global Environmental Facility established in 1990, a financial mechanism to provide assistance to poor countries, received the support of both rich and poor nations. In 1997, delegates from industrialised countries met to discuss climate change issues in Kyoto, Japan. This conference produced the Kyoto Protocol and became the scene of a controversial debate over greenhouse gas emissions and the extent to which industrialised countries would make a commitment to reduce their greenhouse gas emissions.

	Total Int'l Agreements	Int'l Environmental Agreements	Environmental Agreements as a % of all Agreements
Kennedy-Johnson	1943	364	18.7%
Nixon-Ford	2072	413	19.9
Reagan-Bush	2262	536	23.7
Carter-Clinton	2174	564	25.9

Table 1: International Environmental Agreements: U.S. Presidents, Kennedy-Clinton[56] [57]

Since the time of the Kennedy administration and the Limited Nuclear Test Ban Treaty (1963) that reduced the environmental threat of radioactive debris, the United States has joined with other countries to adopt numerous environmental treaties (Table 1). The environment as a policy issue makes up about one out of five international agreements concluded by the United States.

	International Environmental Agreements (selected)
Kennedy-Johnson	Protocol on North Pacific Furs, 1963
	Limited Nuclear Test Ban Treaty, 1963
	Harp and Hood Seals Agreement, 1966
	Protocol on Northwest Atlantic Fisheries, 1966
Nixon-Ford	Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological and Toxic Weapons, 1972
	Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973
	International Convention for the Prevention of Pollution by Ships, 1976
	Conservation of Polar Bears Treaty, 1976
Reagan-Bush	Convention on the Conservation of Salmon in the North Atlantic Ocean, 1983
	Montreal Protocol on Substances that Deplete the Ozone Layer, 1987
	Agreement on the Control and Movement of Hazardous Waste, 1990
	Climate Change Convention[58]
Carter-Clinton	Great Lakes Water Quality Agreement, 1978
	Convention on Long-Range Transboundary Air Pollution, 1979
	Convention on Biological Diversity, 1993[59]
	Kyoto Protocol, 1997

Table 2: International Environmental Diplomacy: US Presidents, Kennedy-Clinton[60]

Table 2 shows selected agreements signed by presidents from Kennedy to Clinton. During the 1960s and 1970s, many bilateral and multilateral environmental conventions, protocols, and treaties dealt with fisheries and wildlife. By the late 1970s until recently, the character of environmental issues changed as *transboundary* concerns—ocean pollution, the ozone layer, deforestation, desertification, biodiversity—became a focal point of global attention resulting in

[56] Clinton administration through 1998.

[57] Source: Adapted from Lyn Ragsdale, *Vital Statistics on the American Presidency: Washington to Clinton* (Washington, DC: CQ Press, 1996), 318-321 and Lyn Ragsdale, *Vital Statistics on the American Presidency*, rev. ed. (Washington, DC: CQ Press, 1998), 329. According to Ragsdale, international environmental agreements include treaties, executive agreements, protocols, and conventions. Environmental agreements include energy, environment, transportation, communications, weather and navigation stations, land transfers, and space and aeronautics programs unrelated to defense.

[58] The agreement was revised to mandate voluntary rather than binding emission reductions before Bush would sign it.

[59] Although Bush refused to sign the agreement, Clinton did sign it but the U.S. Senate refused to ratify it.

[60] Source: Adapted from Peter M. Haas with Jan Sundgren, "Evolving International Environmental Law: Changing Practices of National Sovereignty," in Nazli Choucri, ed. *Global Accord* (Cambridge, MA: The MIT Press, 1993), 420-429; Lamont C. Hempel, *Environmental Governance* (Washington, DC: Island Press, 1996), 170-172; Carolyn Long, Michael Cabral, Brooks Vandivort, "The Chief Environmental Diplomat: An Evolving Arena of Foreign Policy," in Dennis Soden, ed. *The Environmental Presidency* (Albany, NY: SUNY Press, 1999), 194-219.

several important treaties. Included among these issues is global climate change.

The science of global climate change

Although global climate change is a controversial, contemporary international environmental issue, scientists have been aware of the phenomenon for over a century. Svante Arrhenius, a Swedish chemist, noted in 1896 that increasing industrialisation would lead to increases in atmospheric carbon dioxide that could create a future warming trend in the global environment (Arrhenius, 2001). By the late 1930s and again in the 1950s, scientists had documented the human impact on the global climate resulting from an increasing build-up of carbon dioxide in the atmosphere (MacDonald, 1988). In 1979, the first World Climate Change conference convened in Geneva. However, the international meeting was primarily a forum for scientists to discuss the possibility of global climate change with little, if any, action taken by world governments (Rowlands, 1995, 71).

Despite the evidence being obtained by the scientific community, atmospheric greenhouse gases have continued to build up. A decade later in 1988, a scientist working at the National Centre for Atmospheric Research warned that global warming "could well cause climate change over the next two generations as large or larger than civilisation has experienced" (Wolkomir, 1988, 19). In 1990, the United Nations' sponsored Intergovernmental Panel on Climate Change (IPCC) argued that, based on the scientific evidence, "human activities are substantially increasing the atmospheric concentrations of greenhouse gases" and that this will result in "an additional warming of the Earth's surface" (Houghton, Jenkins, Ephraums, 1990, xi). Several months later, the first Bush administration set the stage for the US position at the Second World Climate Change conference when the president stated that his scientists disagreed with the IPCC report (Rowlands, 1995, 80). Five years later, in its second assessment of global climate change, the IPCC reiterated its findings from 1990 (Houghton et al., 1996). In its third assessment presented at a UN conference in China in January 2001, the IPCC stated unequivocally that global warming is a grave threat in which human activities play a major part. As the head of the UN Environment Program stated, "The scientific consensus presented in this comprehensive report about human-induced climate change should sound alarm bells in every national capital and in every local community. We should start preparing ourselves" ("Faster Climate Shift Portends Global Calamity This Century," 2001).

In June 2001, the United States' National Academy of Sciences confirmed the assessment of the IPCC findings (Pianin, 2001, 31). While acknowledging that scientific uncertainties remain, the Academy agreed that the build-up of greenhouse gases is associated with a global warming trend. Nonetheless, translating scientific findings into international public policy has remained problematic.

The administration of George H. W. Bush and global climate change

George H. W. Bush won the presidency in 1988 and two years later his "environmental presidency" exhibited dichotomous tendencies. On the one hand, he was instrumental in support of the Clean Air Act Amendments. Bush used the power resources of the presidency to ensure that the legislation would be passed by the Congress so he could sign it into law. On the other hand, Bush had the opportunity to provide leadership on the global warming issue at the 1990 World Climate Conference. However, the United States failed to join with other industrialised countries in a collaborative effort to address global climate change (Soroos, 1998, 313-314). Bush had succumbed to political pressure from Republicans in the Congress and economic pressure from business and industry that lobbied heavily to protect their interests. Consequently, despite the success he achieved with the Clean Air Act at home, the Bush presidency failed to live up to the expectations of an "environmental presidency" on the global stage. The leadership role of the US presidency failed to materialise when Bush distanced the United States from cooperation with its international partners.

A most important global event occurred when delegates from one hundred and fifty countries met in Rio in 1992 at the United Nations Conference on Environment and Development. This Earth Summit, once again, "provided the opportunity for the president of the United States to provide global leadership concerning the environment" (Daynes and Sussman, 2001, 135). However, as Lawrence Susskind (1994, 39-40) reports, Bush "held off deciding whether to attend until just a month before the conference" and after deciding to attend, it was "for just three days." Three significant issues were debated at this conference—namely, the principle of "sustainable development" outlined in Agenda 21, the Convention on Biodiversity, and the Convention on Climate Change.

President Bush had an opportunity to provide vigorous leadership regarding the issue of climate change but he disappointed environmentalists and fellow delegates. The global warming treaty had several

requirements that Bush opposed. He used his influence to revise aspects of the treaty before he was willing to sign it. For instance, he became a signatory to the treaty only after the wording was changed to reflect his preference for the exclusion of binding timetables for reducing greenhouse emissions as well as specific levels of greenhouse gases (Landy, Roberts, Thomas, 1994, 295). Although the United States became a signatory to the Convention on Climate Change at the Rio Summit along with 153 other countries, it was done only after George H.W. Bush ensured that voluntary rather than mandatory guidelines were established.

The administration of William Jefferson (Bill) Clinton and global climate change

On the global climate issue, Bill Clinton worked to fulfil a commitment made during the 1992 presidential campaign when he and his running mate, Al Gore, pledged that they would provide "*real international leadership* to protect the world's delicate environmental balance" that would include "reducing *U.S. carbon dioxide emissions to 1990 levels* by the year 2000 and accelerate the phase-out of substances that deplete the ozone layer" (Clinton and Gore, 1992, 97).

In 1997, five years after the Earth Summit, delegates from industrialised countries met to discuss the problem of greenhouse gas emissions and climate change. Important agreements were achieved in Berlin two years earlier that set the stage for the upcoming negotiations in Kyoto, Japan (Oberthur and Ott, 1999, 46-48). At the Berlin Conference to the Framework Convention on Climate Change, the industrialised countries accepted the principle that developing countries would not be obligated to accept mandates in the next series of talks that would occur on global climate change. Targets and timetables for the reduction of greenhouse gas emissions were to be established although the language reflected the difficulty in achieving international consensus—namely, "limitation and reduction objectives." The Clinton administration promoted the principle of reducing greenhouse gas emissions to 1990 levels by the end of the century (Soroos, 1997, 202).

The meeting that occurred in Kyoto found the delegates engaged in debates over the level of greenhouse gas reductions that were to be mandated. They agreed that the amount of greenhouse gas emissions in the year 1990 would be used as the goal. In other words, the industrialised countries would be forced to cut their current and future greenhouse gas emissions to 1990 levels. However, different countries emitted different amounts of these gases. Therefore, in an effort to gain the support of the industrialised countries, different targets were established for different countries as an incentive for delegates to sign an agreement. For example, Japan, the host country of the conference, would cut its greenhouse emissions by 6% compared to the United Kingdom's reduction of 8% while the United States would reduce it emissions by 7% (Oberthur and Ott, 1999, 334).

Unlike his predecessor who proclaimed himself an "environmental president" and then used his influence to water down the Earth Summit's Convention on Climate Change before the United States would sign it, the United States, under the leadership of Bill Clinton, became a signatory to the Kyoto Protocol that mandated binding actions on the part of the signatories. Having said this, Clinton was compelled to act, in part, due to pressure exerted by the scientific community. According to the *Scientists' Statement on Global Climatic Disruption* signed by over two thousand US scientists, "further accumulation of greenhouse gases commits the earth irreversibly to further global climatic change and consequent ecological, economic, and social disruption. . . . It is time for the United States, as the largest emitter of greenhouse gases, . . . to demonstrate leadership in a global effort" (Holdren, 1997). Subsequent to the publication of the scientists' statement, President Clinton (1997) stated that it was the obligation of the United States, the largest emitter of greenhouse gases, to "bring to the Kyoto conference a strong US commitment to realistic and binding limits that will significant reduce our emissions of greenhouse gases."

In making this commitment to a Special Session of the United Nations General Assembly, Bill Clinton put the US presidency in a leadership position in an effort to address global warming. Clinton was constrained, however, by the United States Senate. The Byrd-Hagel Resolution passed by the Senate in June 1997 stated that the legislative body would not ratify any greenhouse emission treaties unless the developing countries also contributed in the reduction of greenhouse gases (105th Congress, 1997). As Oberthur and Ott (1999, 69) report, the Clinton administration had taken action on climate change including the establishment of two task forces one under the direction of the Council on Environmental Quality and the other under the authority of the Council on Sustainable Development. At the same time, opposition forces (primarily the fossil fuel industry) had mobilised a lobbying effort directed at the US public and the Senate that challenged the science of climate change as well as suggesting that any reduction in the use of fossil fuels would engender great difficulties

for the US economy and consumers (Oberthur and Ott, 1999, 69).

In retrospect, what occurred in Rio and Kyoto was more symbolic than substantive action. The Convention on Climate Change concluded at the Earth Summit in 1992 resulted in voluntary action on the part of the industrialised countries to reduce CO_2 emissions to 1990 levels by the end of the century. The failure to secure a binding agreement can be found, in part, in the lack of leadership by President George H.W. Bush who pushed instead for a non-binding commitment. Although the conference at Kyoto in 1997 was intended to stabilise greenhouse gas emissions during the period 2008-2012, the European Union's (EU) proposal of a 15% cut by all industrialised countries was opposed by the United States that would only agree to "different goals for different countries with different time limits for different gases" while accepting the 2008-2012 period to return to 1990 greenhouse emission levels (McCormick, 2001, 285-287). Although Clinton had attempted to promote US leadership on the issue, he was limited in his actions by a Republican-controlled Senate that assumed power as a result of the 1994 Congressional elections when the Republicans took control of both houses of the US Congress. Given the new composition of the US Congress and realising that the new Republican majority would not ratify the agreement concluded in Kyoto, Clinton decided it was not worth submitting it for ratification to the US Senate.

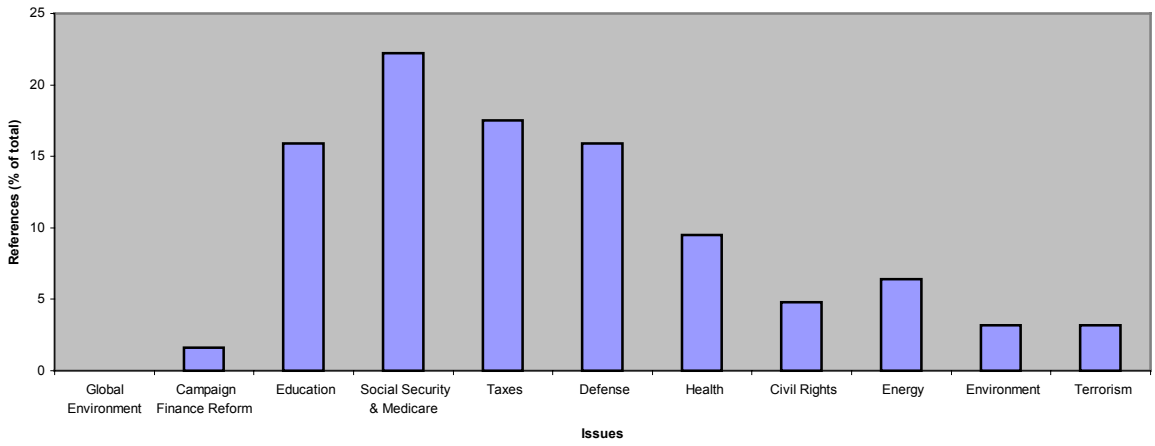
George W. Bush as chief diplomat and global climate change

As chief diplomat, the formal association between George W. Bush and global climate change was the 1997 Kyoto Protocol. Shortly after rejecting the Kyoto Protocol in March 2001, Bush advanced a budget that included cuts in environmental spending as well as a prohibition on spending to implement the Kyoto agreement. In fact, while reducing funding for renewable and alternative energy sources, the Bush administration increased funding for continued development of fossil fuels. As the director of the World Wildlife Fund, Jennifer Morgan, lamented, "President Bush's budget is a blueprint for increasing global warming, offering backward-looking solutions at a time when Americans want to look forward toward a sustainable energy future" ("Bush energy budget boosts fossil fuels, cuts renewables," 2001).

Prior to his first visit to Europe in June, George W. Bush was criticised by EU allies who were committed to reducing greenhouse gas emissions. While stating that his "administration is committed to a leadership role on the issue of climate change" and that he recognised "a responsibility to reduce our emissions," he could offer no more than support for voluntary actions while rejecting mandatory and specific targets ("Bush offers nonbinding steps against global warming," 2001). In Bonn, Germany the following month, the Kyoto Protocol was adopted by delegates representing180 countries although the United States was not included among them. During the conference in Bonn, CNN reported that "all other countries decided to press ahead with the first compulsory global accord on the environment, despite the US withdrawal. But some said the absence of the United States made it virtually worthless" ("Climate treaty to be ratified," 2001). While the 1997 Kyoto Protocol called for an average reduction of 5.2% of 1990 greenhouse gas emissions by 2012, the Bonn agreement resulted in an agreement to make significant cuts in greenhouse gases in preparation for the next Conference of the Parties meeting in Morocco where it was expected that binding agreements would be achieved. The latest gathering of representatives from 160 nations in Marrakesh, Morocco was an attempt to move beyond the success achieved in Bonn in July.

After two weeks of debate and discussion, delegates at this conference agreed to implement the Kyoto Protocol. Still, at least fifty-five countries are required to ratify the treaty so it can go into effect. If world governments ratify the treaty sometime next year, they will finalise an agreement that began ten years earlier at the Earth Summit in Rio. Yet according to the executive director of the Global Climate Coalition, a US group representing fossil fuel interests, "It's sort of irrelevant for the United States" ("US is quiet in climate talks," 2001) and the actions of the Bush administration have reflected the position of the fossil fuel industry. The United States assumed an observer status at the Marrakesh meeting as the Bush administration reiterated its concern that it would not accept any agreement that would impact the US economy in a negative way and waived participation by other major greenhouse gas polluters including China and India.

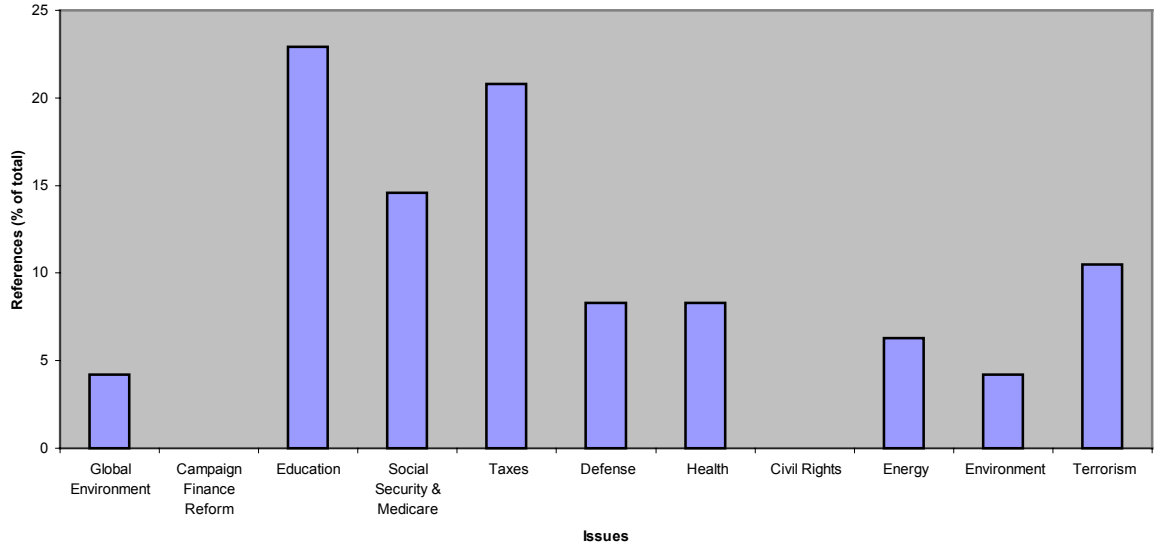
Figure 1: President Bush's Communication with the American Public: Nationally Televised Addresses



George W. Bush as opinion/party leader and the global environment

The president as *opinion/party leader* speaks to the nation in an attempt to "mobilise public support for the policies and programmes of the administration and party on the one hand and respond to constituent interests on the other hand" (Daynes and Sussman, 2001, 32). When speaking to the nation, the president must decide which issues to address and the extent to which they will be emphasised. In this way, the president provides the US public with the level of importance the occupant of the White House gives to these issues.

Figure 2: President Bush's Communication with the American Public: National Radio Addresses



In an analysis of President George W. Bush's communication with the US public, this study compared his attention to the environment with other important policy issues (see Figures 1 and 2). Bush made 111 references to eleven important policy issues in national speeches and radio addresses. The US domestic environment received scant consideration from the president. What is noteworthy is the lack of attention, whatsoever, to the global environment in his televised and radio addresses to the US public. A national televised broadcast by an US president is observed by leaders and citizens around the globe. In the case of global environmental concerns, Bush made it very clear that this policy issue was not a major concern for his administration. Inclusion of the global environment in his radio addresses did not fare much better. As a matter of fact, references were almost non-existent. Although the global environ-

ment has become an increasingly important part of international diplomacy, it has received scant attention in the national addresses made by the president. Moreover, when George W. Bush did raise the issue, it reflected a symbolic response to those concerned with global environmental protection.

Expectations about US leadership and international environmental governance

Although the United States plays a critical role in international political, military, and environmental affairs, as Table 3 indicates, it is not the only important player when it comes to international co-operation in general and environmental governance in particular. In fact, several other political actors are relevant to the global policy making process—namely, other nation-states, international governmental organisations (IGOs), and non-governmental organisations (NGOs).

	United States	Nation-States	International Governmental Organisations	Non-Governmental Organisations
Role	Provide leadership	Decide legitimacy of issues	Set agenda	Publicize issue(s) through the media and other outlets
Actions	Promote participation in conferences and agreements	Negotiate legal instruments and adopt and implement policies	Act as a forum for discussion and debate	Lobby governments and IGOs
Results	Encourage/ pressure governments to implement and enforce agreements	Enforce decisions	Engage in regime formation	Monitor actions of nation-states and IGOs

Table 3: The United States and Other Global Actors: Expectations About US Leadership and International Environmental Cooperation

Having said this, what do we expect of US behaviour regarding global environmental affairs? We expect the United States to provide a leadership role for other countries. Although the European Union, for instance, might attempt to mobilise action on the part of the larger international community, it is usually recognised that non-participation by the US works against achieving effective global action. In order to secure effective international co-operation in conferences and agreements, we expect the United States to promote participation in these instruments of global governance. Once agreements have been ratified, it is important that they are implemented at the national level. We expect the US to engage in positive and proactive ways to encourage nation-states to comply with their obligations under these agreements.

The remainder of this article will address the Bush administration and global climate change.

George W. Bush, the scientific community, and global climate change

Astrophysicist Carl Sagan (1995, 336) once said that "Science, I maintain, is an absolutely essential tool for any society with a hope of surviving well into the next century with its fundamental values intact." Yet integrating science into the policy process is difficult indeed when public officials reject input from the scientific community. Moreover, as David Suzuki (2001) recently commented, "The application of science in industry, medicine and the military is by far the greatest force shaping our lives today. ... But when scientific pronouncements clash with economic or political priorities science invariably takes a back seat."

Last year, scientists reported in the journal *Science,* published by the American Association for the Advancement of Science that the threat of global warming may be irreversible if greenhouse gas emissions are not reduced ("Researchers forecast rapid, irreversible climate warming, 2001). Suzuki (2001) adds that although numerous scientific groups that represent the world's top scientists have stated unequivocally that the human impact on the climate demands an immediate response, George W. Bush rejected the Kyoto Protocol. In other words, Bush turned his back on the scientific community and listened instead to well-heeled organised interests.

	George W. Bush	Scientific Community
Global warming is real	No	Yes
Need more research	Yes	No
Support basic principles of Kyoto Protocol	No	Yes
More fossil fuel production	Yes	No
Symptoms of global warming are apparent	No	Yes
Human impact is critical	No	Yes
US contribution to global greenhouse gas emissions	20%	25%+
When to take action	Later	Now
Scientific evidence	Uncertain	Substantial
Target preference	Voluntary	Mandatory
US role on global climate change	US Provides Leadership	US has Rejected Leadership Role

Table 4: Comparing President George W. Bush and the scientific community: Global climate change

How do President Bush and the scientific community compare in their orientation toward global climate change? As the assessment in Table 4 shows, there is a clear disconnect between scientists and the Bush administration. Where Bush rejects the Kyoto Protocol, asserts that more research is needed, and supports more production of fossil fuels, scientists argue that there is substantial evidence that global warming is a threat, symptoms of global warming are visible, and that action is needed now rather than later. Where Bush maintains that the US is providing leadership on the global climate issue, the scientific community is less likely to hold this view.

Evaluation of George W. Bush, the global environment, and global climate change

Finally, we provide an evaluation of US leadership and the global environment (Table 5). When George W. Bush ran for president of the United States in the year 2000, he addressed many important political, social, and defense related issues. However, the global environment was not among them. Instead of talking about conservation and alternative sources of renewable energy, Bush spoke about compassionate conservatism, less government, lower taxes. He is pro-develop/pro-economic growth. As reflected in his key staff and cabinet appointments, Bush has been influenced by business and industry and conservative Republicans while practising the politics of symbolism regarding the environment.

	Evaluation
Election	Compassionate conservative, less government, more volunteerism, civility
Environmental Theme/Philosophy	Pro-development, economic growth
Influence on the President	Fossil fuel industries, conservative Republicans
Methods	Speeches, reduced reliance on diplomacy, unilateral action by the United States, observer rather than participatory status
Attitude toward the global environment	Disinterest, benign support as long as no perceived negative impact on the economy
Attitude toward global climate change (global warming)	Support for voluntary guidelines and targets; sees flaws in existing global climate agreements
US leadership on global climate change (global warming)	Abandoned opportunity to show leadership on global climate change; little attention to Earth Summit's Convention on Global Climate Change; rejected Kyoto Protocol
Prospects for international environmental co-operation	Uncertainty; successful international co-operation problematic without US participation

Table 5: Evaluation of George W. Bush/US and the global environment/global climate change

Bush and his advisors tend to see global climate change initiatives having a negative impact on the economy and fossil fuel industries. Moreover, the president has declared the Kyoto Protocol "dead" and while stating that his administration is working on a viable plan to reduce greenhouse gas emissions, he continues to oppose mandatory guidelines and targets.

George W. Bush has refused to offer *leadership* on this

most significant global environmental issue. Instead, his administration prefers to go it alone and practice unilateral action. The US now maintains observer status rather than a participatory role in global climate meetings. He has opposed joining other countries in moving forward to ratify the Kyoto Protocol as a step toward making further progress on global climate change.

Conclusion

In order to achieve effective international environmental governance, nation-states must overcome their differences as well as domestic constraints in order to achieve common benefits. Given its pre-eminent position regarding economic, military, and political power it is problematic whether other countries or regional organisations can substitute when the US refuses to act. Despite some positive action at the Kyoto Protocol in 1997, the meeting in Bonn in July 2001, and in Morocco in November, disagreements were evident among the participants at these world environmental gatherings. Moreover, the withdrawal of the US from its commitment to the principles of the Kyoto Protocol and its non-participation, observer status at Morocco suggests that progress on the issue of global climate change will remain uncertain. Without the participation of the United States, can other political actors provide the leadership needed to foster progress on global climate change? If the EU, for instance, contends that it will fulfil its obligations, will other nations follow?

Global climate change is a complex and controversial issue. Yet the Intergovernmental Panel on Climate Change (IPCC), numerous scientific academies, environmental NGOs, and public opinion support action to reduce the threat posed by increasing greenhouse gas emissions. Yet the Bush administration has reiterated that the United States will act unilaterally to develop plans to address the global climate change problem. The fact that his administration has produced delaying tactics and practised non-compliance in terms of the framework of the Kyoto Protocol suggests that we lower our expectations about making progress toward greenhouse gas emission reductions since the largest contributor—the United States—has isolated itself from the international community. Until the U. S. alters its current policy and assumes a leadership role on global environmental issues including global climate change, substantive and effective international environmental governance will be difficult to achieve.

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Environmental Crime and Punishment in Russia: Law as Reason for Breach

by Maria Ivanova[*]

Laws too gentle are seldom obeyed; too severe, seldom executed.
Benjamin Franklin, Poor Richard's Almanack, 1756

The effectiveness of any international agreement ultimately depends on the extent to which parties comply with their obligations. In most cases, compliance with international agreements needs to take place at the national level and through actors other than the state.[61] Domestic constraints have been recognised as critical in shaping behaviour (Brown Weiss and Jacobson 1998; Victor, Raustiala, and Skolnikoff 1998). However, scholarly and policy analyses have largely focused on broader institutional factors such as the economic and political systems and a suite of socio-cultural variables constraining the process of putting specific rules into action. Rarely has the question of the adequacy and appropriateness of the rules themselves been asked. The explanatory determinants of deviant behaviour have therefore been traced to the procedural realm rather than to the substance of the legal regime. While this approach may indeed be valid for the US and other industrialised countries, it can be challenged for the economies in transition of Central and Eastern Europe and the New Independent States of the former Soviet Union where structural problems in the legal systems are still pervasive.

In this article, I extend the analysis on factors determining compliance to a deeper level of the regulatory chain—the nature of the requirements. The study points to a gap in the literature, which could be of special importance to the predictive power of theoretical frameworks regarding compliance with national as well as international obligations. In contrast to common belief that more stringent environmental standards protect public health and the environment to a greater extent, I argue that excessive stringency can be detrimental to the attainment of these goals. The analysis presented is empirically grounded in an extensive research on water quality regulations in the Russian Federation and the New Independent States and the standards they impose.[63] Combining theoretical and empirical synthesis and analysis, I seek to (1) identify a set of critical factors for compliance, (2) assess the strength of each of these mechanisms in the Russian context, and (3) outline a possible reform path. I also examine the linkage between national and international compliance and the implications for compliance with international commitments.

The analysis leads to the conclusion that the burdensome complexity and excessive stringency characterising the current environmental standards system in Russia encourage evasion, create an adversarial regulatory climate, lead to a failure of understanding of the legal requirements, and allow for unchecked regulatory discretion and corruption. A general disbelief in the reasonableness of regulatory requirements is fostered, which ultimately leads to a collapse of belief in the law. The problems posed are thus not only of environmental character but have wider societal implications as rule of law is undermined through the perpetuation of a regulatory culture of non-compliance and non-enforcement. This practice is likely to be reflected in compliance behaviour vis-à-vis international commitments, demanding increased attention to structural problems at the national level.

Compliance theories and institutional implications

The problem of compliance with regulatory requirements has been examined extensively in the literature, giving rise to various explanations for observed behaviour of states and firms. Three major theoretical schools explaining compliance with national environmental laws can be distinguished. The assumption that firms are rational actors seeking to maximise their utility has determined the development of the

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[62] Here one needs to distinguish procedural compliance from substantive compliance. Under procedural compliance with international agreements, a state might fulfill its obligations through submitting national reports and required data. Substantive compliance, on the other hand, requires that the obligations central to achieving the core goal of the accord are operationalized at the national or local level. For example, international commitment to a 20% reduction of SO_2 emissions would require appropriate national legislation mandating the attainment of the goal and the subsequent decrease of emissions from power plants and other relevant polluters.

[63] The research was undertaken in 1999-2000 by the author while working at the Environment Directorate of the Organization of Economic Cooperation and Development (OECD). This paper, therefore, draws on the report prepared for the OECD (Ivanova 2000).

rational polluter theory and has provided the underlying principle for environmental regulation (Maloney and McCormick 1982). More recent studies have challenged this approach and argued that pursuit of self-interest is not an accurate explanation of firm behaviour and that other factors are also at play. One critique, termed complexity theory (Spence 2001), challenges the rational polluter model as unrepresentative of reality and points to the complexity of the legal system as a major reason for firms' reduced capacity to comply. Another important strand of theory is the legitimacy-compliance theory, which views the legitimacy of the law and the legal process as the primary determinant of compliance (Tyler 1990). This section briefly examines the tenets of the three doctrines and identifies the critical determinants and mechanisms as suggested by each of them. The existence and strength of these mechanisms in the Russian context are then evaluated in the subsequent sections.

RATIONAL POLLUTER THEORY

The theory of polluters as rational actors is the foundation for much of environmental regulation. Its major assumptions derive from the economics literature, which explains behaviour of economic actors as a function of their efforts to maximise utility. Thus, the rational firm will be a rational polluter seeking to minimise costs by shifting them onto society (Tietenberg 2000; Gowdy and O'Hara 1995; Mitnick 1980). It will make decisions using an expected value calculation, which is a function of the economic benefit of non-compliance and the expected cost of non-compliance as determined by the probability of detection and the level of penalty imposed. The theory therefore predicts that pollution will occur unless actors are deterred by "coercion" (Hardin 1968) in the form of sanctions, penalties, or other adverse impacts.

The implications of the rational polluter theory are that to induce compliance, strong enforcement would be necessary increasing the cost of non-compliance through sanctions and high probability of detection. The availability of an adequate deterrence mechanism is therefore critical as it can alter actors' utility calculus through a modification of the incentives and disincentives. The rational polluter theory would thus suggest that public authorities concentrate their efforts on minimising the chances of violations going undetected, maximising the probability that sanctions will follow the detection of violations, or making sanctions substantive (Stigler 1970).

COMPLEXITY THEORY

Complexity theory challenges the assumption of the rational model that actors seek to maximise utility and respond to external incentives or sanctions. Instead, it assumes that motivations such as belief in the need to obey the rules and conviction of their appropriateness shape behaviour. Non-compliance is explained through ignorance on the part of the regulated community, misunderstanding about the requirements, or disagreement about their meaning (Spence 2001). The conclusions of complexity theory are that perfect compliance is unlikely and even unattainable. It also predicts that small enterprises would be more often in non-compliance than large facilities as the expertise and resources required to understand and implement the legal requirements would be lacking and unintentional violations would be more prevalent (Dasgupta, Hettige, and Wheeler 2000).[64]

The policy implications of complexity theory are that regulations need to be simple, clear, and accessible. To comply with the law, the regulated community must first be able to understand it. Complexity theory would suggest that simple and precise language reduces ambiguities and inconsistencies, as well as the costs of learning about rules; minimises disputes during implementation; and improves compliance. Furthermore, complicated institutional landscapes and lack of clear division of responsibilities among various regulatory agencies would compromise compliance on the part of the regulated community.

LEGITIMACY THEORY

Legitimacy theory looks for explanations of behaviour beyond the cost-benefit analysis framework of a rational actor and beyond the complexity of the web of regulations, institutions, and social norms. The theory posits that the assumption of traditional scholarship that behaviour responds only to reward and punishment is insufficient and needs to be expanded to include normative values. Legitimacy theory thus attributes compliance to a perception of fairness, legitimacy, and morality of the law (Tyler 1990). This perception hinges on what Tyler terms "distributive justice" and "procedural justice," referring to the fairness of the outcome and the process respectively. Tyler's empirical findings suggest that "Respondents are almost equally likely to comply with the law because they view it as legitimate, whether they think

[64] The complexity theory explanation of non-compliance by small firms, however, competes with that of the rational school. The rational explanation contends that "because owner control is easier in smaller firms, the owner's incentives to violate the law exerts more influence over firm behavior." See Spence 2001 at 41.

the likelihood of their being caught is high or low, whether or not their peers would disapprove of law breaking, and whether or not they think law breaking is morally wrong" (Tyler 1990). The theory asserts that compliance with the law is often best achieved by assuring respect for it and those who implement it.

The factors that motivate compliance according to the legitimacy theory are sense of duty and trust in government, especially in the face of very low probability of detection (Scholz and Pinney 1995; Spence 2001). The implications from the theory are that regulatory requirements should not run contrary to fundamental legal principles as proportionality and equality before the law. Moreover, regulations should be developed in an open and transparent fashion, with appropriate procedures for effective and timely input from interested and affected parties.

FEASIBILITY FACTOR

While none of the three theories examines it explicitly, the feasibility of the requirements is a fundamental tenet of compliance. Feasible standards applicable to all producers, based on sound scientific criteria, risk assessment, and benefit-cost analysis, and underpinned by effective enforcement, are crucial to sound regulation (Hawkins 1984). Excessive stringency of regulatory requirements leads to pervasive non-compliance as governments cannot effectively enforce policies, which are widely perceived to be unrealistic, inequitable, or ill-conceived by those who are affected. At best, the outcome will be formal compliance that is effectively undermined by the exploitation of loopholes or other ways to subvert the goals of the policies. A system of stringent environmental requirements is indeed likely to produce a regulatory paradox bringing about the opposite effect to the one intended by inducing the regulated community to avoid complying with the law (Bardach and Kagan 1982).

The feasibility of requirements will have profound implications on the factors and institutional mechanisms purported as critical by all the three theories considered. Overly stringent standards will impose higher direct economic costs, altering the utility calculus of rational actors and promoting evasive behaviour. Unrealistic standards are also likely to undermine the culture of obeyance and rule of law which complexity theory considers critical to compliance. Excessive stringency will also impact belief in the purpose of law and the rules that constitute it compromising its legitimacy. In sum, overly strict standards give a powerful incentive to industry to fight regulations and to agencies a powerful incentive not to enforce them. Feasibility of the legal requirements is particularly important in the context of the Russian Federation and the New Independent States where the fundamental reform of the legal framework has not affected the system of environmental standards. Dating back to the 1960s environmental standards remain prohibitively stringent and therefore, non-enforced.

Compliance theory and practice in the Russian context

The environmental legal framework of today's Russia developed fairly early in the Soviet period. 139 environmental laws were enacted between 1924 and 1926 alone (Langrind 1990). Between 1957-63, each republic of the Soviet Union adopted nature conservation laws that laid down a rudimentary framework of conservation policies and principles most of which required further implementing legislation. By 1985, about 670 environmental enactments were listed in the USSR Code of Laws (Langrind 1990). However, environmental legislation operated in the context of a social ideology which claimed that pollution could not exist because it did not fit the philosophy of central planning and state ownership of the means of production (Greenspan Bell 1992). Thus, although Soviet environmental laws were sophisticated and comprehensive on paper, they were rarely enforced in practice, and were more aspirational than legally binding. This state of affairs had a corrosive effect on the role of law in Soviet society. Law was conceptualised as a set of norms emanating from and enforced by the state with no meaningful role for the public. This legacy is probably the most difficult and yet the most important to overcome in Russia today.

The process of transition to democracy and a market economy has ushered in far-reaching changes in the economic, social, and political spheres. Comprehensive regulatory reform, including environmental regulatory reform, has been initiated and Russia now faces the challenge of completing it. Ultimately, the effectiveness of regulatory reform will depend on the quality of the regulations it promotes and the ability of government to carry them through. This section examines the regulatory context in Russia against the theoretical framework laid out in the previous section. The analysis shows that the core factors and mechanisms identified by the theories of compliance—strong deterrence and enforcement, clarity and accessibility of regulations, and legitimacy of the legal framework—are lacking in the Russian context. Moreover, the unfeasibility of requirements is a fundamental problem of the environmental protection legislation, preventing the establishment of any effec-

tive institutional mechanisms for compliance promotion or enforcement. Other structural problems—such as inconsistency of regulations with existing legislation and with the institutional framework, imprecision of authority delineation, inequality before the law, economic inefficiency, and lack of public participation—point to the low level of compliance and enforcement. Without a fundamental reform of at least several, if not all, of the factors determining compliance and enforcement, improvement in the environmental regime in Russia is unlikely.

FEASIBILITY OF REQUIREMENTS

Regulation is a practical compromise between the benefits and harms of unfettered economic activity. Therefore, from a social point of view, the question is not whether to allow pollution, but how much pollution to allow (Ackerman 1974). Environmental quality standards set the framework for environmental policy by representing society's judgement for appropriate environmental quality. They also serve as essential regulatory tools through specifying emission or effluent concentrations that the regulated community is required to comply with.

The system of environmental standards in Russia is comprehensive and ambitious, covering thousands of pollutants and mandating very low concentrations of contaminants. Environmental standards were developed in the Soviet Union with the specific purpose of protecting the health of current and future generations on the assumption that no level of risk to human health is acceptable for any pollutants (Derr et al. 1981). The zero risk assumption has consequently led to the elaboration of very strict ambient standards. Often, the concentration levels specified were so low as not to be detectable by the monitoring equipment. (Zholdakova et al.) Appendix 1 exemplifies some of the discrepancies between the standards in Russia and other New Independent States and the European Union.

While arguably very protective of human and ecosystem health, the environmental standards in Russia have contributed little to a decrease in pollution. To the contrary, the marked stringency has led to a consistent breach and a perception of standards principally as a unit of measurement rather than as the limits to be observed. The Federal Report on the State of the Environment in the Russian Federation, for example, cites that in 1993 in the Stavropol region the levels of cadmium in groundwater exceeded the standard by 4,000 times and of nickel 1,000 times. In the Angarsk region, groundwater sources were polluted by methanol up to 150,000 times the permissible levels and by phenol up to 246,000 times the standard (Sokolovsky 1994).

The excessive stringency of standards has important implications for the cost-benefit calculus of the regulated community through the imposition of disproportionate economic costs and even technically impossible requirements. The cost of the additional treatment necessary, or even insufficient, to attain the effluent standards applicable to wastewater treatment plants, for example, is 20—50 times higher than the cost of the standard treatment while the environmental benefits are negligible (Nechaev 1999). Studies have shown that currently in Russia there are no wastewater treatment plants where the discharge limits are being met for all regulated substances (Nechaev 1999). As pointed out by the author of the Law On Environmental Protection of the Russian Federation, compliance with all of its requirements would lead to the bankruptcy of 80% of Russian enterprises (Dehgan 1993).

Moreover, the legal basis for effluent standard setting is unclear and contradictory, allowing for unchecked agency discretion and leading to an imposition of illogical requirements. For example, for discharges into water bodies classified as supporting fisheries, the concentration of contaminants in wastewater has to be lower than that for the same substances in drinking water. However, most watercourses bear a fishery classification that has remained unchanged since the 1950's. As enterprises use drinking water in production processes, in reality the law obliges them to discharge water cleaner than initially received.

In practice, the stringency of legal requirements is mitigated through the lack of enforcement. Thus, in the face of absence of explicit cost-benefit analysis requirements, economic considerations are taken into account as part of the enforcement, rather than the legislative process. While economists see such discretion in agency behaviour as predictable (Fenn and Veljanovski 1988), its consequences in Russia include further legitimisation of breach of the law as acceptable and even necessary behaviour, undermining efforts at building a rule of law society.

DETERRENCE MECHANISM

Incentives and disincentives for compliance are severely misaligned in the Russian legal and regulatory context. This stems from the outdated system of environmental standards, the inefficient system of fees and charges for pollution, the inadequate liability provisions, and the overall ineffective regulatory structure and practice.

Many legal acts encourage evasion and non-

compliance through the imposition of unrealistic and unreasonable requirements. For example, the Instructions for Standard Setting of Discharges (Emissions) of Hazardous Substances in the Atmosphere and Water Bodies dictate that actual discharge levels be adopted as the legally required effluent standard when such discharges are lower than the legally mandated values. (§ 3.4 cited in (Gunter and Zhmur 2000). This approach implies that temporary low levels of pollution (due to decreased production or other technical reasons for example) could become legally required values. It presents a clear and strong disincentive for industry to comply with standards and to invest in pollution reduction measures. Moreover, it creates hostile relations between the regulatory agencies and the enterprises as limits are adjusted downwards only for the law-abiding industries while the ones out of compliance continue to receive exemptions. Introducing stringent standards based on actual concentrations jeopardises the potential for growth and severely undermines compliance culture.

An important deterrence mechanism is the system of fees and charges for pollution. The Russian Federation has legislated a system of emissions, effluent, and solid waste fees based on a zero-threshold step function for assessment. Within allowable limits, each firm pays a fixed fee per unit of emissions. When the firm's emission limit has been reached, the fee increases from five to twenty-five times (Palmisano and Haddad 1992). However, the charges are derisory and enterprises find it more profitable to pay the higher fines for discharges above the limits than to invest in pollution control (Sedova 2000). While probably an exaggeration, the statement that "for the cost of flying an accountant from Moscow to New York, a major oil company could pollute the entire Black Sea" (Dehgan 1993) may in fact not be far from the truth. Furthermore, state-owned industries are subject to soft-budget constraints or may simply negotiate exemption from payments (Studies 2000). Non-compliance and non-enforcement are therefore seen as a legitimate way of levelling the regulatory playing field.

Liability is still not adequately addressed in environmental legislation. Although chapters declaring liability exist, they do not explicitly refer to other acts (Administrative Codes, the Criminal Code, etc.) for relevant sanctions against violators. Rather, the provisions are of general character: "the persons guilty of the violation of the water legislation bear administrative and criminal responsibility in accordance with the relevant legislation." The reimbursement of compensatory damages is also mandated by the Water Codes but no specific mechanism is set forth. Hence, the legislative mandate, though stronger than ever before, is still not as direct, practical and forceful as necessary.

The probability of detection is, moreover, very low, as no continuous ambient monitoring takes place and the main responsibility for monitoring of discharges lies with enterprises themselves. Due to the lack of human and financial resources, monitoring by the regulatory agencies is confined to cross checking the reported values. In the marine inspectorate of St. Petersburg, for example, the budget cannot cover the salaries of the employees; 2.5 people are responsible for over 100 enterprises; the laboratories are in a decrepit condition, lacking basic reagents and instruments; the inspectors have limited access to one car; and an inspector's salary is 660 rubbles or $22 a month (Emelkina 2000). The low remuneration of inspectors' work along with their discretionary powers to sanction non-compliance with the stringent requirements, open possibilities for corruption, invalidating any deterrence of breach of the legal requirements.

COMPLEXITY OF SYSTEM

The most noticeable achievement of environmental regulatory reform is the adoption of a comprehensive body of environmental legislation. However, the utility of the legal system has been undermined by the failure of the regulated community to understand the requirements due to the incomprehensibility of the legalistic language, the lack of awareness of the existence of specific provisions, and the complexity of the institutional system.

The regulatory system in the Russian Federation relies extensively on a large body of subordinate legislation—decrees, resolutions, regulations, administrative orders, decisions, etc. The regulated community must invest considerable time and resources in understanding the applicability of all regulatory documents, especially given the fact that regulations are not easily accessible. Subordinate legislative documents are not published and disseminated adequately resulting in ignorance about the requirements amongst the regulated.[65] Furthermore, the institutional framework for environmental management is overly complicated, leading to poor co-ordination among the various governmental bodies with parallel functions and a number of structural problems:

- there is uncertainty about exactly which agency

[65] In Georgia, for example, about 80 to 90% of the regulations mandated are never developed due to financial constraints, and for the same reasons, about 80% are never published (Ivaniashvilli 2000). Similar constraints figure in Russia and the other New Independent States.

should take overall responsibility and, as a result, action is delayed or not taken at all

- interagency and even interdepartmental rivalries result in the withholding of information that should be shared for the best solutions to be found
- each agency tends to have its own particular interests and constituency so that interagency conflict rather than co-operative problem-solving ensues
- technical expertise is divided between different agencies so that no one body can gather together the necessary scientific and managerial team.

An additional stress on the system is the fact that the structure of the executive is in a permanent state of reorganisation, centralisation, decentralisation, even liquidation of certain bodies, which are later restored. For example, in 1992 a decree by the President of the Russian Federation declared the establishment of the Ministry of Environment and Natural Resources, which was formed to replace seven abolished ministries of the USSR and four republican ones. Several other bodies were merged into the newly created Ministry, though retaining some independence. These included the State Committees for Hydrometeorology, Water Resources, Forestry, Geodesy and Cartography, Geology and Mineral Resources, and the Arctic and Antarctica. However, the newly created agency was not strong enough and by the middle of 1993 the committees became independent again. In 1996, the Ministry of Environment and Natural Resources shed its ecological division which became a State Committee (Goskomekologia) and became a Ministry of Natural Resources (Tzitser 1996). On 6 July 2000, a presidential decree was issued to merge the two institutions again. The institution retains the name Ministry of Natural Resources.

The endless restructuring of central power structures has resulted in a confused system of regional agencies which are ultimately responsible for enforcement of the regulations. This cumbersome structure makes co-ordination difficult, delays decision making, and reduces transparency. Furthermore, the constant change of the institutional framework and structure has led to regulatory fatigue and disillusionment with the reform process.

LEGITIMACY OF REQUIREMENTS

The critical elements of legitimacy include perception that decisions have been taken through a procedurally fair process, that the parties involved have had an equal opportunity to participate, and that decision makers are neutral and unbiased, reaching conclusions based on objective information (Greenspan Bell 2000). The legitimacy of laws as commitments of society to achieve common goals has been undermined considerably during the Soviet period. Supremacy of economic goals, secrecy, and discretionary state regulatory power have led to disbelief in the rule of law and the ability of the state to fairly regulate, mediate, and arbitrate.

The illegitimacy of the legal system is grounded in the perception of unfairness and unreasonableness of its fundamental requirements. The environmental standard setting process in the Soviet Union was one of high secrecy and was confined solely to academic institutes associated with the respective sectoral ministries. The closed, technical process relied solely on experts without involvement of policy makers, industry or the general population. Insulated, exclusively science-driven and devoid of any inputs from concerned parties, standard setting was a routine scientific exercise rather than a policy process. While the level of democratisation of environmental policymaking and implementation has increased considerably in the 1990s, the process of standardisation remains as closed, inflexible and exclusive as previously. This exclusivity undermines severely belief in the reasonableness of the requirements, as the regulated community has not been involved at any stage of the process. In contrast, when standards are developed in an open dialogue with industry and consumer groups, combined with a research strategy to evaluate the feasibility of standards independently, compliance with the standards is much greater (Makkai and Braithwaite 1991; Ayres and Braithwaite 1992).

Legitimacy of legal rules in the Russian Federation is undermined further because of the perceived bias and corruption of the regulatory agencies. The unclear division of authority has vested discretionary powers in regulatory authorities while accountability mechanisms are poorly developed and not adequately applied. Enforcement is mainly within the prerogatives of regional and local authorities, which are closer, and often vulnerable to, well-organised lobbies and rent seekers. The capture of regulatory authorities by powerful interest groups has led to preferential treatment of certain industries (Baldwin and Cave 1999; Skilling and Griffiths 1971). Furthermore, the dependence of local authorities and whole communities on industrial complexes for employment and social services has promoted differentiated regulation and unethical practices, compromising the fundamental principle of equality before the law (Boots 1998).

Among the most notable innovations introduced into the Russian regulatory framework as a result of reform is the solidification of the right of citizens to information and participation in decision-making.

This right is unprecedented and increasingly recognised as an important vehicle for environmental protection. However, disclosure of information to the public is still insufficient, preventing an active, informed involvement of concerned individuals and groups in policy formulation and implementation. The information deficit is one of the most serious failures of the regulatory system. Overcoming this problem will be crucial for the successful implementation of legal requirements. Only when the regulated community possesses sufficient and comprehensible information on the regulatory regime with which it has to comply will it be in a position to do so. Furthermore, provision of information on performance by industry and government is the only viable way to ensure public involvement in the process of environmental policy formulation and implementation. Due to the fact that the public has remained poorly informed and educated about environmental issues, the demand for accountability of regulators has remained low, leading to a perpetuation of the inefficiency of regulations.

Reforming the system: Obstacles and opportunities

Environmental regulatory reform has been a prominent part of the reform agenda in the beginning of the transition process in the Russian Federation when environmental issues assumed high political visibility and served as a catalyst for wider political reforms. In general, reforms greatly accelerated the establishment of environmental laws. Compliance with the laws, however, has remained low and enforcement ineffective. The analysis in this article has shown that the major institutional mechanisms for compliance promotion are either lacking or inadequately developed in the Russian Federation. Moreover, while attention has largely focused on the procedural realm, the fundamental tenet of the legal and regulatory framework—the system of environmental standards—has remained unaltered since the 1960s and needs to be revised in light of the overall restructuring of economic and social relations and latest scientific knowledge.

Reform of the system of environmental quality standards will focus the debate on the central questions of environmental policy: What are the goals towards which society should aspire and how can they be achieved? As these issues are at the convergence point of economic, social and environmental priorities, explicit choices will have to be made which will inevitably require information disclosure, participation of major stakeholders in the policy formulation process and devising regulatory mechanisms to address conflicting interests. Thus, the process of formulating environmental standards could and should become a catalyst and supporter for wider democratic reforms and the establishment of rule of law in Russia. A number of serious obstacles that are likely to inhibit reform efforts of the standards system deserve particular attention.

THE STATUS QUO

The existing environmental standards system has been in place for over forty years and despite its ineffectiveness in improving environmental quality, is supported by regulators and regulated alike and even by the public. In the face of radical regulatory reform initiatives, the issue of environmental standards has remained virtually outside of the debate as each of the stakeholders benefits from the status quo. The stringency of standards makes them ideologically appealing to environmental agencies as it reinforces their commitment to environmental quality in the eyes of the public. Despite their low levels, charges collected from polluters provide a revenue stream for environmental authorities, which is likely to decrease if standards were relaxed and enforced. On the other hand, the technical and economic unfeasibility of standards presents a valid excuse for industry for non-compliance. A more realistic level of requirements, if coupled with a sound enforcement procedure, would entail an obligation to comply with the regulations and lead to greater economic costs. The interests of oligarch groups who have largely captured natural resource extraction industries will be threatened by a stronger, enforceable environmental regime. As natural resource extraction is connected with potentially grave environmental impacts, the economic costs these industries face from environmental enforcement are immense. Thus, the current status quo of strict standards and lax enforcement benefits the powerful interest groups and reforms of the system are likely to be strongly opposed by them.

Furthermore, the population is lulled into the false belief that its health and the health of future generations are protected through the system of stringent environmental requirements on polluters. The lack of comprehensible information on the state of environment and performance by industry as well as regulators undermines awareness and public pressure for improved environmental performance. Moreover, the general level of understanding of environmental problems is extremely limited, as the public has not received sufficient education in the linkages between pollution and public health. The revision of the present system and development of new standards will

involve many more stakeholders and the authority of the environmental and health agencies and their regulatory logic is likely to be challenged and their status possibly threatened. The current regulatory structure also possesses an ideological appeal as the Soviet system of environmental standards has long been boasted the most stringent and therefore protective of human health in the world (Keep 1995). Currently, when the economic, military and political reality has compromised most aspects of Soviet governance, the environmental standards system provides a last hold-out of ideological superiority.

SCALE AND SCOPE

The revision of environmental standards will require not only a change of numerical values but a broad-based reform encompassing the principles of standard setting, the institutional framework, the legal basis and enforcement mechanisms. Introduction of a radically different regulatory approach, one of transparency, accountability, co-operation, information and burden sharing would be necessitated. It is therefore not surprising that the scale and scope of the reform might seem prohibitive and discourage agencies from initiating a reform process.

Environmental reform will inevitably be linked to the pace, scale and scope of overall reform and will depend on the capacities of institutions to carry out the necessary revisions. Where economic and political reforms have been slow or perfunctory, environmental regulatory reform has lagged behind as well. However, the urgency of environmental problems in relation to their immediate impact on human health and standard of living presents a challenge for environmental reform to be at vanguard. It can in turn trigger wider social changes and facilitate the implementation of larger reform efforts.

ACTORS

A number of institutions with often conflicting interests share responsibility for standard setting. Consensus among health, environment, fisheries and natural resources ministries and committees is imperative for the success of any standardisation reform and a challenging task. Furthermore, the target groups affected by standards are numerous, including industry, agriculture, water and water services suppliers, public utilities, and commercial users. If a comprehensive revision process is launched involving all stakeholders, inputs from all the target groups might lead to conflicting demands and considerable time and effort will be required to reach a consensus, a process in which Russia has little experience. The power to reform the environmental standard system lies within the authority of national decision makers while the effects of the current ineffective system are felt at the local level. Institutional inertia and regulatory capture are therefore a major deterrent of reform.

COMPLEXITY OF SUBJECT MATTER

Environmental standards imply a possession of knowledge about environmental phenomena which is not available to any one institution. The complexity of the subject requires the consideration of a multitude of questions including natural sciences (ecosystem centred and human health centred studies), economics, technological considerations, social concerns, etc. Most officials within regulatory agencies in the NIS are trained in the natural sciences and lack the legal, economic and management knowledge necessary for a revision of the system. The interdisciplinary character of the process of environmental standards setting would require extensive education and training of scientists, officials, industry representatives, and the population at large.

Implications for international compliance

Compliance with international environmental agreements has received increasing attention in the academic literature (Chayes and Chayes 1995; Cameron et al. 1996) and especially so in the wake of the Cold War and the emergence of a multilateral world (Koh 1997; Brown Weiss 1993). International agreements present an intriguing research object as they impose obligations but lack concrete implementation tools and rely on national institutions to ensure implementation and compliance. The linkage between national capacity and international performance is therefore critical and of particular interest in countries where domestic constraints systematically hinder compliance.

To explain and predict compliance with international obligations, two levels of analysis need to be considered—the influence of the domestic context on international compliance and the influence of international institutions on domestic constraints. The analysis in this article has shown that domestic constraints can be severe and difficult to overcome. The logical prediction from the assessment of the Russian national regulatory context, characterised by low level of compliance, would be the absence of compliance with international agreements as a result of the structural domestic problems. However, studies of Russia's performance in regimes like the Montreal Protocol, for example, have shown that compliance can be induced if certain institutional mechanisms are deployed (Brown Weiss and Jacobson 1998; Victor,

Raustiala, and Skolnikoff 1998). The financing mechanism and national capacity building measures of the Montreal Protocol, coupled with strong procedural requirements such as monitoring and reporting, have facilitated national compliance where none would have occurred. International institutions, therefore, could alter and realign incentive structures at the national level and promote change in behaviour.

The implications of these findings merit further research, particularly at the interface of international relations and law on the one hand and comparative law and politics on the other. The role of institutional mechanisms at the international level in realigning domestic preferences and behaviour will be critical to understanding domestic compliance determinants as well as to efforts at designing more effective international governance structures.

Conclusion

A central function of the modern state is to provide economic and social welfare for its citizens, including macroeconomic stability, improved education and training, equality of opportunity, and high environmental quality. Governments use various mechanisms to attain these objectives, but laws and regulations aiming to align public and private interests have figured as prominent tools. The question of compliance with legal obligations and requirements has figured prominently in the literature, giving rise to various theoretical explanations. In this article, I have synthesised the propositions of the different theories regarding factors critical to enforcement and compliance and have pointed to a gap in the explanatory framework when it is applied to the context of the economies in transition of the former Soviet Union.

The system of environmental quality standards representing the objectives of environmental quality that society aspires to attain has remained virtually intact since the 1960s. The regulations on environmental quality have become an obstacle to achieving the purposes they were intended for due to their overly burdensome complexity, unfeasibility, affordability constraints, or miscommunication of requirements. Thus, they have a direct impact on the effectiveness of a deterrence mechanism, the complexity of the regulatory framework, and the legitimacy of the legal system. Environmental regulatory reform would ultimately depend on political commitment. Governments need to take the initiative to begin a process of reinvigorating the institutional framework and building trust in regulators through an endorsement of a clear strategy and a sustained commitment to its execution. The emergence and empowerment of domestic constituencies with a stake in the reform process and outcome will be essential in strengthening the capacity and accountability of the state. To this end, improved access to information, awareness raising, environmental education, and greater transparency of the decision making process are critical. The impact of international institutional mechanism on realigning domestic constraints is an important area for further research and analysis.

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Environmental Change and Foreign Policy: Research Findings from the United States, China and East Asia

*by Paul G. Harris**

The Project on Environmental Change and Foreign Policy began at London Guildhall University in early 1998. The primary goal of the Project is to foster and bring together research on an understudied aspect of international environmental policy and politics: *foreign policy*. It almost goes without saying that foreign policy—the objectives that officials of national governments seek to attain, the values and principles underlying those objectives, and the methods by which they are sought—can play an important, often vital, role in determining whether countries join international efforts to address environmental problems. Yet, this is a relatively neglected area of research (compared to other areas of international environmental politics research and general foreign policy analyses addressing, for example, trade and security issues). To redress this relative gap in our knowledge, the Project seeks to better understand the actors and institutions of foreign policy that can influence international environmental co-operation and national participation in, and implementation of, international environmental regimes.

An underlying philosophy of the Project is that neglected ideas and approaches to the topics covered should be given a platform. Many other research projects ask participating scholars to fit their research into clearly defined frameworks. While this approach leads to explicit results, it can exclude the views and conclusions of scholars using approaches outside the mainstream. Hence, this project seeks to combine work using proven and accepted methods and approaches with work derived from alternative perspectives. The result is new information—or new interpretations of old information—that increases our understanding of how to address adverse changes to the natural environment.

Phase I of the Project examined environmental aspects of United States foreign policy. The core objectives were to show how environmental changes influence the US foreign policy process; to analyse the actors and institutions—both domestic and international—that constrain and shape US actions on environmental issues; to better understand the central role played by the United States in international efforts to address problems of global environmental change; and to critically assess US international environmental policies. Other objectives of the Phase I were to "test the waters" of research in this field; to showcase research that had not been forced into traditional empirical, epistemological, or ontological boxes, in the expectation that new areas and issues would be illuminated; to give insight to governmental and non-governmental practitioners and activists that may improve their understanding of environmental issues in US foreign policy; to showcase research that could have a positive effect on policy making and scholarship; and to enlighten students and laypersons interested in international affairs, US foreign policy, and environmental protection.

Two dozen scholars from several countries contributed to Phase I of the Project. In achieving our initial objectives we examined US domestic politics and foreign policy generally, international environmental diplomacy, theories and philosophies of international relations and the environment, and US leadership in the post-Cold War world. Phase I resulted in three books. *Climate Change and American Foreign Policy* (New York: St. Martin's Press, 2000) is dedicated to understanding the place of climate change in US foreign policy. *The Environment, International Relations, and US Foreign Policy* (Washington: Georgetown University Press, 2001) examines several environmental issues in the context of US foreign policy, ranging from ocean pollution and environmental security to whaling and environmental trade sanctions. *International Equity and Global Environmental Politics: Power and Principles in US Foreign Policy* (London: Ashgate Publishing, 2001) is a monograph that analyses the degree to which principles of equity and social justice have permeated international environmental politics and US foreign policy.

Phase II of the Project on Environmental Change and Foreign Policy is devoted to understanding foreign policy processes in the context of environmental change (and vice-versa) in the Asia-Pacific region. Broadly speaking, research for Phase II examines ways in which foreign policy influences national participation in international environmental co-operation; shows how environmental changes or resource scarcities affect or are affected by foreign policy processes; looks at how international environmental negotiations and agreements influence envi-

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ronmental protection at national, regional or global levels; and/or achieves related objectives. In short, Phase II highlights the ways in which foreign policy and international relations impact efforts to protect the environment, particularly as this relates to Asia-Pacific.

Some of the research and resulting papers in Phase II examine specific countries, groups of countries, and international organisations in East and/or Southeast Asia, and their relationships to environmental change. Other research papers in this phase examine specific environmental issues and their relationships to a particular country or countries. Papers generally devote some attention to exploring the theoretical implications of the research. Each paper in the Project has practical significance—and sometimes a great deal of importance—for policy makers and practitioners. About 40 scholars are working in Phase II of the Project. Phase II included two dedicated panels at the 2001 meeting of the International Studies Association (sponsored by the Environmental Studies Section and Foreign Policy Section of ISA): "Environmental Change and Foreign Policy in Asia I: International Co-operation in East Asia" and "Environmental Change and Foreign Policy in Asia II: Focus on China and Japan"

Research from Phase II has been gathered into three forthcoming books. *Global Warming and East Asia: The Domestic and International Politics of Climate Change* is dedicated to understanding the forces shaping responses to climate change in East and Southeast Asia. *International Environmental Co-operation: Politics and Diplomacy in Pacific Asia* undertakes detailed analyses of various aspects of international environmental co-operation in East Asia, thereby highlighting key features of multilateral relations that affect, and are affected by, foreign policy processes. *Confronting Environmental Change: Eco-Politics and Foreign Policy in East and Southeast Asia* is a series of studies focusing on foreign policy and sustainable development in East and Southeast Asia.

The remainder of this abbreviated research summary lists the contents of the Project's major publications and very briefly discusses some findings. In this extensively abridged version for the conference proceedings, the Project's research papers cannot be described in any detail. Readers are referred to the full conference report for a complete summary (downloadable at: www.fu-berlin.de/ffu/akumwelt/bc2001/download.htm#H) or (ideally) the books themselves for detailed findings (see References list below).

Phase I: Environmental foreign policy of the United States

The first phase of the Project looks at what is arguably the most important actor in international efforts to limit damage to the environment: the United States. It is the world's largest polluter by many measures, and it has the world's largest economy. It also has political, technological and financial resources that could be deployed to address environmental problems. For these and other reasons it is extremely important to understand how and why it develops the international environmental policies that it does.

CLIMATE CHANGE AND AMERICAN FOREIGN POLICY

Clearly there are many issues worthy of consideration in understanding and explaining US foreign policy on climate change. Many variables feed into the policy process that produces US climate change policies. There are many interpretations of these causes and explanations, and also different evaluations of the merits and ethics of US climate change policies. One could arguably boil down many of these explanations to three broad areas: the impact of power and "realist" conceptions of the world; domestic politics and the pluralistic nature of US politics; and the influence of ideas and norms in state behaviour. But, as the chapters in *Climate Change and American Foreign Policy* show, things are even more complex than that.

Climate Change and American Foreign Policy is organised into three sections, which are preceded by an introduction summarising the science and international diplomacy associated with climate change. In the first section, "Critiquing US Climate Change Policy," we critically evaluate US foreign policy in the context of climate change. Is the United States behaving as it *ought* to given the potential consequences of climate change? In what ways is it "behaving" or "misbehaving" relative to the expectations of emerging international standards? Paul G. Harris looks at US burden sharing and, while acknowledging that the Clinton administration did move ahead of its predecessors, finds US actions on climate change falling short by most practical and normative measures. Peter Doran explains and criticises US policy with reference to Fordism and the addiction of Americans to consumptive lifestyles.

The second section, "Politics of US Climate Change Policy," aims to explain and understand US climate change policy. If the US is not doing enough to combat climate change, why not? To the extent that it is joining international efforts to deal with climate change, what explains its behaviour? We argue that

many of the answers lie in politics—both domestic and international—broadly defined. Jacob Park examines how climate change evolved from an obscure scientific topic to one that is prominent in US foreign policy. Neil Harrison looks at the domestic influences on US environmental foreign policies, and Gary Bryner does likewise while focusing on the role of Congress in shaping US climate change policies. Andreas Missbach analyses regime theory to explain US climate change policy, whereas Karen Fisher-Vanden finds much of the explanation for US policy in this field in international "policy instrument prominence." The consequences of, and reasons behind, US climate change policy are also illuminated by Jorge Antunes, who looks at regime effectiveness and joint implementation.

Finally, the last section, "International Norms and US Climate Change Policy," examines the role of nascent norms in shaping US climate change policy. The degree to which the United States co-operates in the future with other countries to limit the causes and consequences of climate change may, to a great extent, be a function of whether it adopts and embraces emerging international norms in the area of climate change. Michele M. Betsill argues that the United States has indeed been involved in shaping international climate change norms, and has been influenced by them. Paul G. Harris goes one step further to argue that the United States has adopted new international norms of "common but differentiated responsibility" in the context of climate change, even if it has not done enough to act on them.

THE ENVIRONMENT, INTERNATIONAL RELATIONS, AND US FOREIGN POLICY

In *The Environment, International Relations, and US Foreign Policy*, contributors look at various issues to illustrate how US foreign policy operates. More specifically, they highlight explanations and causes of US international *environmental* policy. Many of them also attempt, to varying degrees, to evaluate US policy from practical and normative perspectives. Following an introduction to environmental issues in US foreign policy in Part I, Part II of the book examines *Realpolitik* in US international environmental policy. The first two chapters examine the concept of "environmental security" from practical and critical perspectives. Braden Allenby defines environmental security and suggests ways in which the concept might be implemented as a new priority in US foreign policy. Jon Barnett conducts a critical examination of environmental security in US foreign policy by referencing national security strategy documents and the policies and pronouncements of the Departments of Defense and State. The final chapter in Part II uses a case study of the Caspian Sea region to demonstrate how environmental security and geopolitical considerations influence US environmental foreign policy.

The chapters in Part III of *The Environment, International Relations, and US Foreign Policy* examine US international environmental policies by focusing on domestic politics and international influences and impacts. Beginning with an introduction to the multilevel policy aspects of stratospheric ozone depletion, researchers use case studies to focus on the presidency and Congress, business influences, nongovernmental organisations, the courts, and changing bargaining environments in international regimes. Srini Sitaraman looks at local, national and international forces influencing the evolution of the international regime on stratospheric ozone depletion. John Barkdull shows how the executive branch shaped US (and indeed international) policy on ocean dumping. Robert Falkner uses cases of ozone depletion, climate change and biodiversity to illustrate conflict among business interests seeking to shape US environmental foreign policy. Morten Bøås shows how the United States in particular has influenced policies of multilateral development banks, in the process highlighting increasingly important roles played by environmental impact assessments and nongovernmental organisations. The third part of the book concludes with Elizabeth DeSombre's study of environmental sanctions in US environmental foreign policy and Kristen Fletcher's analysis of US policies toward the international whaling regime.

The final part of *The Environment, International Relations, and US Foreign Policy* is less analytical than most preceding chapters. Instead, it takes a normative and prescriptive approach to US international environmental policy, recommending a shift in priorities among policy makers so that both US interests and broader normative objectives might be promoted. This final chapter summarises many of the key points of the Project's third book, *International Equity and Global Environmental Politics: Power and Principles in US Foreign Policy*.

INTERNATIONAL EQUITY AND GLOBAL ENVIRONMENTAL POLITICS: POWER AND PRINCIPLES IN US FOREIGN POLICY

International Equity and Global Environmental Politics: Power and Principles in US Foreign Policy sets out to answer these primary questions: To what extent has the US government—and indeed other developed countries—accepted international equity (or justice) as an objective of global environmental policy? What explains the US government's limited acceptance of

international equity as an objective of its policy in the global environmental field? Why did the US government under President George H.W. Bush not go further in accepting international equity as an objective of US global environmental policy? Why did the Clinton administration go beyond the Bush administration in this regard? Why did it not do more to implement this policy? Should the United States (and other developed countries) go further to *embrace* international environmental equity as an objective of global environmental policy?

The book has three sections. The first section, "Considerations of Equity in International Environmental Politics," introduces the concept of international environmental equity and attempts to define it before summarising the evolution of the concept and its practice throughout more than two decades of international environmental diplomacy. The second part of the book, "International Environmental Equity and US Foreign Policy," summarises the US response to evolving themes of international environmental equity before explaining it by reference to (1) concerns about US national interests, (2) the pluralistic nature of US politics, and (3) the modest, yet at times important, influence of equity concerns among some officials in the US government. The final part of the book, "Equity, US Foreign Policy, and the Future of Global Environmental Politics," looks at the implications of evolving norms of international environmental equity for the United States and the world.

Phase II: Environmental foreign policy and diplomacy in China and East Asia

Many variables shape the policies and behaviours of governments toward one another and toward the problems they face. Indeed, with regard to climate change and other environmental issues, the variables are even more complex, disparate and contentious than in most other areas of foreign policy and international relations. The case studies in Phase II of the Project on Environmental Change and Foreign Policy examine many of those variables in the context of East Asia.

The world is experiencing profound environmental changes and increasing scarcities of natural resources. These problems, ranging from local ones such as water pollution and desertification, to global ones like stratospheric ozone depletion and climate change, are often difficult to understand and even more difficult to solve. Pacific Asia, including China and the countries of East and Southeast Asia, is one region that is bearing the brunt of many of these environmental problems. The countries there are also sources of many problems affecting the rest of the world. It is therefore important to understand why the environment is being harmed in this region, and how to limit and hopefully reverse that harm in the future. The goal of these books is to assist in developing and advancing that understanding. Toward that end, they seek to share with readers findings of scholarly research on environmental foreign policy and international environmental co-operation in East Asia.

GLOBAL WARMING AND EAST ASIA: THE DOMESTIC AND INTERNATIONAL POLITICS OF CLIMATE CHANGE

The goal of this book is to bring together studies that examine the implications for East Asia (i.e., China, Northeast Asia, and Southeast Asia) of climate change and the international regime that has emanated from international negotiations, and in turn to show how the countries of East Asia play important roles in the international politics of climate change and the increasingly widespread and disparate efforts to address it at national and local levels. We pay particular attention to China and Japan. They are arguably the most important players in East Asia, and they represent the two extremes of countries in the region: China is a developing country with the world's largest population, many people there are highly vulnerable to climate change, and it is the second largest source of "greenhouse gas" emissions; Japan is a highly industrialised country with membership in the club of the world's most developed economies, it has major financial and technological resources that can be brought to bear on the problem of climate change, and it also makes a large contribution to greenhouse gas concentrations in the atmosphere.

In the first section of *Global Warming and East Asia: The Politics and Foreign Policy of Climate Change*, "Perspectives on the Politics of Climate Change in East Asia," Paul G. Harris introduces some of the politics and foreign policy of global climate change in the East Asian context, with particular emphasis on some of the chief concerns of the countries there, namely, concerns about the impacts of climate change and questions of international justice that derive from those impacts. The second part of the book focuses on China. Zhihong Zhang looks at three forces shaping China's policies on climate change: China's interests, strong concerns about sovereignty, and national prestige. Subsequently, Yuka Kobayashi and Michael T. Hatch devote more attention to diplomatic and domestic political considerations in helping us better comprehend China's policies on climate change. This section ends with a case study of China's energy sector and the Clean Development Mechanism by Axel Michaelowa and several co-researchers. The

third section of *Global Warming and East Asia* focuses on Japan. Yasuko Kameya argues that Japan's foreign policies on climate change have changed from being reactive to outside diplomatic events to being much more proactive in trying to shape those events. Shouchuan Asuka-Zhang examines Japan's climate change diplomacy in greater detail, while Atsuko Sato looks specifically at the role of science and knowledge in shaping its course. The section on Japan ends with a more forward-looking essay by Dana R. Fisher, who focuses on Japan's climate change regime and its evolution following the 1997 Kyoto Protocol. The final section of the book looks at the costs and opportunities of climate change in Southeast Asia. Joy Galvez describes the challenges facing the Philippines; Frank Jotzo and Agus P. Sari use a case study of emissions offset regimes to highlight how developing areas might "cash in" on implementation of the Kyoto Protocol; and Tim Forsyth looks at international investment and technology transfer in Southeast Asia.

INTERNATIONAL ENVIRONMENTAL COOPERATION: POLITICS AND DIPLOMACY IN PACIFIC ASIA

There is now a large body of literature on international environmental co-operation. It has helped scholars, policymakers, and stakeholders understand the factors leading to the formation and implementation of international environmental regimes. However, the body of work focusing on Pacific Asia is relatively small (at least in English), and we are only now beginning to comprehend the distinctive characteristics of the region that affect when and how countries there choose to work together in combating environmental pollution and resource scarcities. *International Environmental Co-operation: Politics and Diplomacy in Pacific Asia* contributes to the research that is filling this gap in our knowledge, in particular by bringing under one cover some of the recent work examining international environmental co-operation in East Asia.

The book is divided into two sections. The first section examines many of the important issues and actors that are important for our understanding of international environmental co-operation among the countries of the region and between regional actors and the rest of the world. It highlights such important themes as North-South co-operation, questions of international justice, and environmental security, and it illustrates key features of specific multilateral environmental agreements, important national actors (such as China and the United States), international organisations and international financial institutions, multinational corporations, and nongovernmental organisations. Donald Brown details the emerging norms of international distributive justice or equity as they relate to climate change and China. Lorraine Elliott endeavours to define a common agenda on environmental security in East Asia, and Paul G. Harris looks at how US policy on environmental security toward Northeast Asia has and will (or will not) change in the medium and long term. Jack N. Barkenbus looks at trade issues as they relate to questions of international environmental co-operation in East Asia. Morten Bøås examines the "technocratic consensus" in the Asian Development Bank and its impacts on environmental diplomacy in the region. Giok Ling Ooi, Yue Choong Kog and Simon Tay undertake a case study of business and multilateral environmental agreements in Southeast Asia.

The second part of the book looks more directly at international environmental co-operation and regime building in the region, focusing on, among other issues, acid rain, nuclear waste, deforestation, and conflicts over regional seas. Sangmin Nam explores ways in which ecological interdependence in Northeast Asia has led to different forms of "environmental governance," many of them less than totally effective. Shin-wha Lee's research highlights the diplomacy of regime building in Northeast Asia, while Wakana Takahashi uses the case of acid rain to illustrate problems of environmental co-operation in that region. Stephanie Tai, Andrew Loewenstein, Todd Bissett, and Eric O'Malley look at the controversial question of nuclear waste and the international politics of its processing in East Asia. Moving south, Tom Nass examines environmental co-operation around the South China Sea and Allen L. Springer undertakes a case study of the 1997-1998 forest fires in Indonesia to show how national environmental problems can be internationalised. All of these themes, actors and issues—and many more—are important for improving our understanding of environmental problems in Pacific Asia, and the essential means for dealing with them.

CONFRONTING ENVIRONMENTAL CHANGE: ECO-POLITICS AND FOREIGN POLICY IN EAST AND SOUTHEAST ASIA

The responses of East Asian countries to environmental changes are always complicated and frequently disparate. Different historical experiences, cultures, levels of development, political systems, and policy-making structures (among many other variables) cause these countries to view their environmental interests differently, to participate differently in international environmental negotiations, and to operationalise environmental protection schemes differ-

ently. Among the variables affecting international environmental co-operation in East Asia are foreign policy and environmentally sustainable development. That is, the relationships of these countries with one another and with other actors outside East Asia, and the ways in which those relationships are (or are not) translated into environmental protection, matter for international efforts to protect the environment of East Asia and, to an increasingly significant degree, the world. With this in mind, *Confronting Environmental Change: Eco-Politics and Foreign Policy in East and Southeast Asia* surveys several East Asian countries to better understand (and hopefully better answer) these types of questions: What are the different environmental experiences of East Asian countries? What indigenous factors and particular foreign policy processes influence whether some countries are more willing than others to join international environmental protection efforts? What are the different underlying stimuli for these countries' positions in international environmental negotiations, and what role do foreign policy institutions play in fostering or preventing international environmental co-operation in East Asia? What variables stimulate governments and other actors to develop in environmentally sustainable ways, and what are the keys to success in this regard? Our particular interest is in areas where domestic politics and policy making interact with international politics and institutions. As such, we are particularly interested in the making and implementation of *foreign policy*, and its effects on environmental protection in East Asia.

Confronting Environmental Change comprises three parts. The first part is intended to act as an introduction to the detailed case studies that follow. John Barkdull and Paul G. Harris show that our knowledge of environmental foreign policy theory remains relatively low, at least compared to other areas of international politics (e.g., international political economy, international security). Hence the importance of bringing together research on environmental foreign policy has some urgency, given the declining state of world's natural environment. Also in the first section, Paul G. Harriso starts to examine some of the variables and forces shaping environmental protection efforts in East Asia by surveying eco-politics and environmental foreign policy in China and Japan. The second part of the book examines many of the specific actors, institutions and forces shaping environmental foreign policy in East Asia, with particular emphasis on China and Japan. In a provocative essay, Mika Merviö analyses how "anthropocentric ideologies" and changing international power relationships have been important in shaping Japan's environmental foreign policies. Hiroshi Ohta examines Japan's policies on climate change by focusing on the intersection between domestic politics and diplomacy. Shifting attention to China, Judith Shapiro tells the story of environmental degradation resulting from concerns about national security during the Maoist period, pointing to how this important period in Chinese history still influences policy. Taking this latter argument further, Yuka Kobayashi describes the last three decades of Chinese environmental diplomacy as that of a "troubled modernizer" grappling with seemingly conflicting goals of modernisation and environmental protection. Jonathan Harrington provides further detail in an analysis of the domestic and international determinants of China's environmental diplomacy. Looking at the unusual case of Taiwan, Wen-chen Shih shows how environmental foreign policy can be a balancing act between trade and environmental protection.

Part three of *Confronting Environmental Change* looks deeper within the countries of East and Southeast Asia to help us better understand the international and domestic politics and policy of sustainable development. It illuminates the attributes of environmental foreign policy and the domestic and international politics of sustainable development in East and Southeast Asia. Very importantly, it also teaches us general lessons about environmental politics and policy, as well as international environmental co-operation, which can be applied to other regions and other countries. Ho-Ching Lee examines the ways in which science and international incentives have influenced China's policies toward the climate change agreements. Jak Sangchai looks at the ways in which nongovernmental organisations have tried to influence Thailand's foreign policy on biodiversity, demonstrating how they can play an unexpected part in environmental debates. Looking at how international factors shape regional efforts to implement environmental protections, Peter Stoett explains how conceptions of national, human and environmental security are important in diplomacy and politics of the Mekong River delta. Providing a rare explication of Vietnam's marine environmental policies, Tran Duc Thanh, Tran Dinh Lan, and Pham Van Luong describe how international assistance has played an important role in facilitating the country's marine preservation efforts. Taking a comparative perspective on understanding sustainable development, Tse-Kang Leng looks at environmental policies in Taiwan. Finally, Phillip Scott Jones describes his detailed case study of community-based conflict management in Papua New Guinea and shows how this case has broader lessons for environmental protection in the

region.

Conclusion

The findings of the Project on Environmental Change and Foreign Policy have been prodigious, and the next phase of the Project will be dedicated to exploring in greater detail their implications for environmental policy making. (Subsequent phases of the Project will explore other geographic areas and undertake further comparative analysis of cases in other regions, e.g., Europe.) This report has sought to introduce the Project's research to date, thereby serving to point students of international environmental politics and policy to the detailed case studies. However, here I wish to briefly highlight a few findings of the Project. I am of course leaving out most of what we have learned.

Domestic politics are often paramount in shaping environmental foreign policy. In most cases, the most important determinants of environmental foreign policy are found within countries. This will come as no surprise to students of international environmental politics. The case of the United States shows vividly how important domestic politics can be in shaping the foreign policy of one central actor. But more interesting things can be said in this regard. For example, while the US case shows the importance of pluralism—the degree of access that civil society and foreign actors have in the policy process—it is not always clear how this plays out. In Japan, a recognised democracy, there is relatively little pluralism, especially compared to the United States. Nongovernmental actors and the public have less influence than many casual observers would expect (whereas bureaucrats and business interests are very influential in shaping policy). Surprisingly, in the case of China—widely recognised as being ruled by an authoritarian government—quite a large number of actors shape policy. These actors range from interested governmental officials and scientists—even foreign scientists—to local officials and industry leaders, among others. Even the semi-independent and official media and nongovernmental organisations have played a more important role than one might expect—perhaps a more important role than in Japan and other more democratic countries.

International factors can, at least in some cases, shape environmental foreign policy. To say that domestic politics can be paramount is of course not to say that international influences are not germane in many cases. Indeed, they can be central to policy formulation. Japan is again a case in point. Japan's environmental foreign policy is arguably driven by its desire to be viewed as a legitimate major power in the eyes of other industrialised states. That is, environmental diplomacy is a way for Japan to peacefully increase its power vis-à-vis other states. Taiwan is another example of how international forces can be important. Its environmental policies are arguably a function of its dependence on international trade and its desire to avoid environmental sanctions. Environmentalism among the government and people of Taiwan may have little role in shaping its environmental foreign policies. Arguably the distribution of "environmental power" in the world also has influenced US foreign policy at times. Insofar as the United States gets worried about global environmental changes, as it does from time to time, the ability of other countries—particularly developing countries—to make or break international environmental protection efforts can push the United States to develop environmental foreign policies that it might not otherwise have wanted.

History matters, sometimes a great deal. This is one of the more interesting conclusions of the Project. History quite unrelated to the environment can shape environmental foreign policy. East Asia provides a striking example of this. China, for example, is virtually obsessed with its treatment by foreigners in past centuries. One of its primary goals when joining and implementing environmental accords—and indeed all international agreements—is to avoid the humiliation it experienced in the nineteenth century. This has practical consequences, as when China refuses to be bound by certain verification measures that are viewed as important to effective implementation of international agreements for sustainable development. War history shapes much of Japan's foreign policy, including its environmental foreign policy, and the responses to that policy by other countries in East and Southeast Asia. Japan's environmental foreign policy, and its environmental aid in particular, is to a significant degree (in effect) an effort to atone for the way it treated neighbouring countries in the first half of the twentieth century—and its neighbours expect it to be this way. The degree to which history influences environmental foreign policy in East Asia should not be underestimated.

International norms do influence environmental foreign policy. Increasingly, governments do not wish to be viewed as "dirty actors" refusing to participate in international environmental agreements. There is a growing norm of international environmental responsibility that seeps into policy making. Hence even the United States in the 1990s chose to join voluntary agreements to address issues such as climate change, even at the risk of reinforcing nascent precedents of inter-

national environmental responsibility. Similarly, Japan is concerned that its reputation for harming the environments of other countries—through logging of Southeast Asian rainforests or the practices of overseas subsidiaries of Japanese corporations—is harming its broader foreign policy interests. And the United States, despite being the sole superpower, has at times succumbed to the "pressure" of the norm of international environmental equity to gradually accept a greater share of the responsibility for its impact on the global environment and for helping poor countries deal with environmental changes (the backsliding policies of the administration of George W. Bush notwithstanding).

Environmental foreign policy is often not about the environment. As already suggested, countries may act on environmental issues for reasons partly or totally unrelated to the environment. Japan's environmental foreign policy is in part about establishing itself as a credible global power and an influential actor in this issue area (in part because it cannot easily do so in others, such as in security affairs). China's substantial efforts to join international environmental negotiations and regimes in the early 1990s were much less motivated by environmental concerns than by the desire to garner international financial assistance and technology for its economic development, its interest in being viewed as a leader of the developing world in this issue area, and (most interestingly, perhaps), its overwhelming desire to escape the diplomatic isolation imposed on it by much of the Western world following the Tiananmen crackdown in 1989.

The number of actors shaping most environmental foreign policies is usually very large. Again, this is no great revelation for observers of international environmental affairs. But it is worth repeating, because it reminds us that the process of environmental foreign policy making is complex and seldom as easy to explain as many would have us believe. And the usual actors we identify as being important, such as nongovernmental organisations, may not be working in quite the way we expect. The United States is of course well known for having many organisations with environment-friendly names that in fact work hard to prevent the United States from joining or implementing international environmental agreements. But it gets even more complicated. For example, the case of Thailand and the biodiversity convention shows that even environmental organisations may oppose international environmental accords if in so doing they can achieve other important (and usually laudable) goals or (more cynically) if they or their officials can garner additional power in or with government. Which actors, institutions or forces are the most important? It depends. It depends on the country being studied, the particular environmental issues at stake, the country's level of economic development, and (among many other variables) the combination of domestic and international forces at play—including environmental changes themselves. What we can say is this:

Foreign policy processes are indeed crucial in shaping the international environmental behaviour of states. Because they are usually the conduits between individual, state, and international actors and forces, foreign policy makers, bureaucracies and institutions not only mediate policy, but also shape its formulation, determine the degree to which it enters international dialogue, and influence its implementation. In short, the degree to which the natural environment is protected is in large part a function of foreign policy and all the actors, institutions and forces of which it is comprised.

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State, Society and Sustainable Development: Taiwan in Comparative and International Perspectives

by Tse-Kang Leng[*]

Sustainable development is a vital issue for mankind in the 21st century. In the developing countries, high economic growth is achieved at the price of environmental deterioration and social injustice. Even for the newly industrialised economy like Taiwan, the public has a vague understanding of sustainable development. The synthetic content of sustainable development is always confused with the single-facet concept of environmental protection. In reality, sustainable development is not just a scientific consideration. It is a political, economic, and environmental concern (Schnurr and Holtz, 1998). A long-term vision, focusing on the appropriate role of the state in balancing competing social, economic, and environmental needs, is needed in order to design a grand strategy to maintain a sustainable future.

The main purpose of this article is to analyse domestic and international approaches of sustainable development in Taiwan and Canada. These two countries represent different stages in the trajectory of sustainable development. A comparative analysis of these two countries sheds lights on general principles of sustainable development in the changing political and economic environment. This article argues that to ensure a sustainable development that meets the needs of the present without compromising the ability of future generations, an appropriate role of the state is needed. The state must develop a mechanism of collaborative governance with the business community and civil society. International participation facilitates the closer interaction between market benefit and compliance of the business community.

This article first discusses the Taiwanese and Canadian concept of sustainable development. Given the fact that sustainable development could not be achieved by direct state action alone, this article continues to discuss the interaction between the state, the business community, and political forces in the process of balancing competing goals of sustainable development. Given that the bottom-up inputs to governmental policies is increasing, this article tries to point out various forms and momentum of public participation and analyses the role of non-governmental organisations in sustainable development. Finally, in the last section of the article, the author analyses advantages and limitation of Taiwanese and Canadian approaches of international participation for sustainable development.

Conceptualising and institutionalisation of sustainable development

THE CANADIAN CONCEPT OF SUSTAINABLE DEVELOPMENT

The Canadian scholar David Bell elaborates the content of sustainable development from the Canadian perspective. Bell argues that sustainability requires feedback systems that allow all three of its core elements—environment, economy and society/community—to be tracked simultaneously. Governments can find numerous opportunities for win-win policies that are economically sound, environmentally friendly, and socially responsible. In effect, sustainable development proposes a new paradigm of decision making for all sectors of society. It entails a new perspective on present-day issues and challenges, and requires a better appreciation of the complex interconnections between the economic, social, and environmental aspects of current challenges. In order to effect sustainable development:

- Environmental policies need to be socially and economically feasible;
- Social policies need to be environmental and economically feasible;
- Economic policies need to be socially and environmental feasible.[66]

The Canadian state has been dedicated to a comprehensive goal balancing economic development, social justice, and environmental protection. In addition to environmental regulations and infrastructure building, one major tool for Canada to achieve sustainable development is through market incentives. As former Canadian Minister of Environment Christine Steward

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[66] These three points were provided by Professor David Bell of the York University during the author's stay at York Center of Applied Sustainability in the summer of 1999. Professor Bell's views are elaborated in a report submitted to the Canadian government. See David Bell, Paul Halucha and Mark Hopkins, "Sustainable Development Concept Paper," unpublished manuscript, 1999, pp.3-5.

indicated, Canada challenges the proposition that environmental protection will disrupt economic development. Working towards a cleaner environment benefits the economy through creating new job opportunities.[67] The Canadian concept of "sustainable development" is much broader than environmental protection. Sustainable development emphasises co-existence and co-prosperity between the state and society, and between the current and future generation (Kirkpatrick and Lee, 1997). Multiple actors--including the central government, local governments, business communities, industries, and NGOs—are involved in the sustainable future of the nation. Even though the promotion of sustainable development requires the co-ordination of top-down and bottom-up endeavours, the state still plays a determinant role. Through the exercise of political power and policy tools, the state serves as a catalyst to educate the general public and integrate interests of various stakeholders for the goal of sustainable development.

TAIWANESE CONCEPTS OF SUSTAINABLE DEVELOPMENT

Taiwan's political system in the 1970s and early 1980s remained one of authoritarian control. Voices from the civil society were hardly heard. Public policy-making was top-down rather than interactive (Gold, 1986). During Taiwan's authoritarian past, economic development was achieved at the expense of environmental deterioration. Development was not "sustainable" in Taiwan. In the past decades, Taiwan has suffered catastrophic environmental problems. Vehicles, motorcycles, and indoor pollution contribute to serious air-pollution problems. Loss of ground cover, deforestation, poor water distribution system, and low sewage coverage are main reasons for problems related to water quality (Yao, 1997). Most urban areas in Taiwan lack green and open spaces. In addition to improving visual and aesthetic impacts, preserving Taiwan's cultural heritage is an urgent task for the state and society to undertake.

The rise of a sustainable development consciousness had emerged coinciding with Taiwan's democratisation process. Beginning from the mid-1980s, public resistance toward bad environmental management became a spur for political democratisation in Taiwan. In other words, Taiwan's bottom-up new environmental movement has played a dual-role of pushing political democratisation and sustainable development. However, the term "sustainable development" is brand-new to Taiwan even in the 1990s. To cope with the new challenges of sustainable development, the Taiwanese government has adopted various instruments to achieve balanced goals of environmental protection and economic development. In addition to traditional command and control methods of environmental management, environmental impacts assessment (EIA) has also become a prerequisite for major development projects (Tang, 2000). In practice, EIA has gradually become a starting point for state-society interaction. Local governments and environmental non-governmental organisations (ENGOs) also get involved in the interactive process of achieving sustainable development.

At the current stage, however, Taiwan is in the transitional period of forming a consensus on sustainable development for the whole society. The state is adjusting its role in promoting balanced goals of national development. At the same time, the business community and civil society are strengthening their capacities to channel their demands. In 2001, the Taiwanese government released its plan of building a "Green Silicon Island (GSI)". Similar to the Canadian concept of sustainable development, the GSI plan put environmental protection as the major policy goal and emphasises the harmony of economic development, social justice, and ecological sustainability. Different from the former path of economic development in the 1970s and 1980s, the GSI plan indicates that environmental protection and economic development is not incompatible; on the contrary, environmental protection is the pre-condition of economic development. The ultimate goal is to rebuild the confidence between the state and society, and promote the initiatives of joint-implementation in sustainable development. Seven major approaches are included in the action plan of Green Silicon Island: knowledge-driven economy, priority in environmental protection, efficient usage of natural resources, social justice, regional equality, co-operative mechanism, and international connections. (Council for Economic planning and Development, 2001)

In brief, the Canadian and recent Taiwanese conceptualisation of sustainable development indicates that the process of consensus-formation may sometimes be a painstaking process and require careful calculation by all parties involved. Sound management of the environment cannot be achieved through one-time deals or decisions, but is rather a continuous challenge requiring diverse groups to work together despite different views and values. Since the goals of sustainable development may involve conflicting interests within the state and society, the consensus

[67] A speech delivered by the Minister of the Environment Christine Stewart at the Americana 1999 Conference, Montreal, March 25, 1999. For the full text, see <www.ec.ca/minister/speeches/amer99_s_e.html>.

process is deliberately directed at devising "do-able" actions and clearly identifying how agreements are to be fulfilled. The flexibility of consensus processes allows parties to fine-tune solutions as needed. By including everyone who has a stake in making the agreement work, especially those who will be needed for implementation, practical and detailed plans can be spelled out (Cormick, Dale, Paul, Sigurdson and Stuart, 1996:105-106).

INSTITUTIONAL SETTINGS CARRYING OUT SUSTAINABLE DEVELOPMENT

The Taiwanese institution to promote bureaucratic co-ordination and consensus building in the central government level is the National Council of Sustainable Development (NCSD). In June 1989 and August 1991, the Ministry of Economic Affairs (MOEA) and the Environmental Protection Administration (EPA) respectively formed committees to respond to the Montreal Protocol. In May 1992, the Executive Yuan formed the Global Change Working Group (GCWG) chaired by the EPA's Deputy Administrator in order to co-ordinate global environment related activities in all government branches. In December of 1996, the Executive Yuan elevated the position of GCWC under the Executive Yuan, and reorganised its mission under the name as the National Council of Sustainable Development (Energy and Resources Laboratories, Industry Technology Research Institute, 1-2). In Taiwan, the government recognises that the co-existence of economic development and environmental protection could be realised through innovation of environmental technologies, yet lacks the momentum to take an active part to push these steps forward (Environmental Protection Administration, Taiwan, 2000). In 1999, total funding for governmental R and D on environmental innovation reached only 24 million US dollars. Moreover, Taiwan still lacks an institutional mechanism to co-ordinate cross-sectional research on sustainable development. The Environmental Protection Agency is still not a governmental department at the ministry level. In most cases, production ministries such as the Ministry of Economic Affairs have first priority in governmental budgeting. In other words, environmental innovation based on market incentives is still under-developed in Taiwan.

As indicated in the preceding analysis, one salient characteristic of the Canadian approach toward sustainable development is the process of consensus building. This consensus building process includes bureaucratic co-ordination and state-society interaction. Among various mechanisms to promote consensus building, the National Round Table on the Environment and the Economy (NRTEE) plays a key role.

The NRTEE was legislated by an Act of Parliament in 1994 to serve as a catalyst in identifying, explaining, and promoting the principles and practices of sustainable development. NRTEE is an independent agency of the federal government committed to providing decision makers and opinion leaders with reliable information and objective views on the current state of the debate on the environment and economy. A multi-stakeholder approach, combined with impartiality and neutrality, are the hallmark of the NRTEE's activities.

The major difference between NRTEE and NCSD is that while the Canadian model focuses more on a multi-stakeholder approach, the Taiwanese model emphasises more on a bureaucratic co-ordination and elite-oriented approach to achieve sustainable development.[68] Instead of following the more traditional institutional model of bringing together individuals or businesses that have common interests or goals, NRTEE is multipartite and reflects different backgrounds and experiences, different perspectives and insights, different values and briefs. Four broad categories for membership are included in the NRTEE: government, business, strategic public policy, and environmentalists. In a sense, the NRTEE is a microcosm of society (Dale, 1995).

Accommodating competing economic and political goals of sustainable development

The previous section explains the conceptualisation and institutional building of sustainable development in Taiwan and Canada. In the process of operating sustainable development strategies, accommodating competing goals of economic development and environmental protection is the key for success (Adkin, 1998). Voluntary compliance from the business community, based on market incentives, provides a pathway toward sustainable development in developing countries.

BUSINESS INTERESTS AND SUSTAINABLE DEVELOPMENT IN CANADA

The goal of sustainable development to balance economic development, social justice, and environmental development is not an easy job. The first and direct challenge to this goal is the argument that environmental protection will harm economic development

[68] Interview with Chih-Yuan Yang, Director of Technology Advisors, Environmental Protection Agency, Taipei, Taiwan, June 28, 1999.

(Schramm and Warford, 1989). Economic depression means both less funding for technological innovation and government intervention to protect the environment, and thus creates a vicious circle, leading to more deterioration of social justice and environmental quality. In Canada, however, the government and the industry have gradually created a market-based formula to achieve the goal of sustainable development. The Canadian government after the Kyoto Protocol put special emphasis on the development of a system to credit industries for taking early action to reduce emissions.[69] From a more positive perspective, industries could increase energy efficiency and accumulate emission credit for future trading.

Market incentives provide a new tool to change perceptions and policies of local governments, which are the main actors to implement sustainable development goals. The policy shift of the Alberta Provincial government provides a good example.

As a major mining and oil-producing province in Canada, Alberta had long opposed greenhouse gas control regulations set up by the Federal government of Canada. The Ralph Klein government of Alberta bitterly denounced the federal government's agreement to binding targets in Kyoto. Former environment minister Ty Lund threatened to resist federal regulations introduced to meet the target wile Klein warned that Albert's growing energy industry could face ruin. At the end of 1999, however, the Klein government announced new policies to introduce measures that will put Alberta at the forefront of provincial efforts to reduce greenhouse gas emission. Alberta planned to adopt an action plan to highlight what is possible by applying voluntary, technology-driven solutions to the problem of rising emission levels. Klein's Conservative government and Alberta's industry would committee between $20 to $30 million to short- and long-term plans. These plans include lowering speed limits, offering financial incentives for the purchase of fuel-efficient vehicles, developing eco-efficient industrial parks, introducing an annual target for the government's purchase of electrical power produced from green sources, developing a sequestration programme for carbon dioxide that would inject the gas into depleted oil, and adopting National Energy Code standards for Alberta government facilities to improve energy efficiency.

At the core of Alberta's 180-degree turn in the realisation that an energy revolution was taking place. Alberta firms have developed considerable expertise in energy–efficient oil and gas extraction, technology that could become a valuable export commodity as the world moves to control such heat-trapping gases as carbon dioxide. The province also has huge reserves of natural gas. Since natural gas burns cleaner than coal or oil, moreover, it is expected to become a valuable part of the answer to greenhouse gas emission levels. Given the new technology innovation and market values, the Alberta Economic Development Authority, a business group that offers the government strategic advice, finally pushed the Alberta government to take new action. Furthermore, pressure from progressive companies also played a significant role in the province's new approach. Executives from such firms convinced Klein and the majority of his cabinet that moving toward an energy-efficient economy has its rewards.[70]

NO EASY CHOICE: THE CASE OF TAIWAN'S FOURTH NUCLEAR POWER PLANT

In Taiwan, the case of Fourth Nuclear Power Plant also demonstrates that policies of sustainable development involve balancing competing social interests and economic benefits. The triumph of the 2000 Presidential Election made Chen Shui-bian became the first Taiwanese president from the opposition camp. It was Chen's campaign promise and his party's major platform to scrap the Fourth Nuclear Power Plant in northern Taiwan. On October 2000, the Premier announced to reverse the decision made by the former government and ordered a halt to construction of the Fourth Nuclear Plant. However, due to the fact that the ruling Democratic Progressive Party (DPP) only occupied minority seats in the Legislative Yuan (Parliament), the decision to halt the project was under severe attacks from the opposition Nationalist Party (KMT) and the business community. The nuclear power plant controversy was later escalated into a political turmoil, causing a possible recall of the President. In February, 2001, the Premier yielded to the opposition pressure to revive the project to save the cabinet and Chen's presidency.

While announcing his decision to halt the construction of nuclear power plant in 2000, the Premier indicates six major points for consideration: (1) Taiwan will not experience power shortage after halting the project; (2) alternative options to nuclear power plants are available; (3) nuclear waste will cause permanent damages to the environment; (4) managing the nuclear disaster caused by malfunctioning is beyond the current capacity; (5) the cost of halting the

[69] For detail, please refer to the document published by Environment Canada, "Environmental Priority-Climate Change," www.ec.gc.ca/envpriorities/climatechange_e.html.

[70] The Ottawa Citizen, October 18, 1999.

ongoing construction contract will be lower than continuing investment; (6) the ultimate goal is to build a non-nuclear home in Taiwan.[71] However, the government failed to persuade the business community, especially the high-tech sectors, that alternative options to nuclear power plant will guarantee the stable supply of power. The business raised the issue that the government should not reverse the ongoing project approved and carried out for a period of time. By doing that, the business community may lose the confidence toward the government and choose to move out of Taiwan. Leaders of major unions in Taiwan also indicated that the halt of the nuclear project may increase the cost of power supply. Alternative options such as private power plants create more problems such as resistance from local communities and environmental pollution.

However, as the Canadian case indicates, a shift to the policies of sustainable development is also a process of redistribution of interests within the society. The Formosa Plastics, one of the biggest business groups in Taiwan, supports the fossil-fuel power plant as an alternative to nuclear power plant. Wang Yong-ching, President of the Formosa Group, argued that power plants burning coal should be the major source of power supply in Taiwan. Wang indicated that his current and future power plant projects could supply stable power to meet the need of economic development. He emphasised that Taiwan should not abandon fossil fuel as the major power source before figuring out other ways to solve the problem of global warming. In other words, the decision of halting the nuclear power plant may create potential business opportunities for those who build fossil-fuel based power plants around Taiwan. However, environmental pollution caused by fossil fuel created another problems in sustainable development.

The opposition camp also raised the issue of sustainable development to attack the plan of halting the nuclear power plant. Sustainable development has been utilised as a useful vehicle of power struggle in Taiwan. The opposition camp argued that nuclear is a "clean energy" to the environment. Advanced industrialised nations have the capacities and express intentions to help Taiwan manage the nuclear waste. If Taiwan substitutes nuclear power plant with fossil-fuel based power plants, the opposition camp argued, the amount of carbon dioxide emission in Taiwan will increase 16.9 million tones annually. If Taiwan does not take substantial actions to cut carbon dioxide emissions, the total emission amounts will reach 501 million tons and 19.6 tons per capita in 2020, higher than the OECD level of 12.14 tons in 1990. This high emission amount is not acceptable in the international society (Tsai 2001:3-5).

The reversal of the nuclear power plant decision is also a reflection of current political and economic structure in Taiwan. The opposition parties formed strategic alliances with the business community to press the ruling party to honour decisions made by the former KMT government. The opposition parties supported the "sunset clause" to abolish nuclear power plants in thirty years, but asserted that in order to guarantee continuous economic development and emission reduction, nuclear power plant is the best solution for Taiwan at the current stage.

On the other hand, the long-history of anti-nuclear plant ideology of the ruling DPP restricts its capacities of negotiating interim options with the opposition parties and the business community. The major weakness of the DPP in the nuclear power plant controversy is its failure to form alliances with the business community except those who have the interests in investing in private power plants by burning coal. As the case of Canada's Alberta Province demonstrates, energy-efficient technologies provide a promising solution to solve the dilemma of economic development and environmental protection. Introducing advanced energy technologies from abroad and investing on alternative energy options such as natural gas in the domestic soil may promote market incentives for the business community. Unfortunately, the ruling party in Taiwan emphasised on the moral aspects of abolishing nuclear power plants, but failed to indicate that alternative options may increases business benefits in the long run. The loss of business confidence pushed the ruling DPP into the trap of ideological crusade, and thus increased the power of the opposition camp to utilise the interim "nuclear sunset clause" as a balancing act of achieving sustainable development.

The Taiwanese and Canadian cases demonstrate that various goals of national development are not necessarily contradictory. In the policy-making process of achieving sustainable development, a win-win situation of continuous economic growth and environmental perfection is possible after appropriate state intervention. State actions involve various forms of alliances with key actors in the civil society, especially the business community and opposition parties. Local interests, business benefits, and environmental concerns could be linked together through market incentives and technological innovation.

[71] Lien Ho Pao, October 28, 2000.

Grass root dynamics: The general public, non-governmental organisations, and sustainable development

The real momentum to push forward sustainable development depends on the consciousness of the general public. Interaction between the state and civil society on sustainable development is not a zero-sum game. Non-governmental organisations (NGOs) play the role to educate the general public and channel rising demands from the grass roots. In industrialised countries, the evolution of a public environmental interest has been characterised by a transition from preoccupation with ad hoc, reactive, and transitory forms of citizen input to better-organised, longer term, and increasingly "proactive" activities (Hess and Howlet 1997:116). Environmental organisations have become a significant force in political lobbying, especially demanding increased public involvement in resource and environmental decision-making in the domestic and international arena (Van Rooy 1997:93-114).

ENVIRONMENTAL ACTIVISM AND NON-GOVERNMENTAL ORGANIZATIONS IN CANADA

The Canadian environmental movement comprises at least 1800 groups that vary in size from small, local ones to large national groups like Greenpeace (over 300,000 members) and the Canadian Wildlife Federation, (which claims 620,000 members, supports and affiliates). In between these poles we find major national groups like the Canadian Nature Federation (36,000 members) and the Friends of the Earth (with 25,000), along with large provincial and regional organisations such as the Western Canada Wilderness Committee (with over 25,000 members) and Pollution Probe (with 20,000). It seems safe to conjecture that over one million Canadians belong to at least one group (Wilson 1992:110-111).

Different environmental groups have different interests in specific environmental issues. Some organisations are home-grown while others have international roots. Wilderness preservation has been the focus of the Sierra Club and the Western Canada Wilderness Committee; the Pollution Probe and Society of Promoting Environmental Conservation emphasise pollution and recycling businesses; The David Suzuki Foundation serves as an independent environmental research unit; many legal services are provided by organisations such as the West Coast Environmental Law Association, the Canadian Environmental Law Association, and the Sierra Legal Defense Fund.

A case of environmental activities is the Friends of the Earth (FOE) Canada. In addition to the traditional tactics of ENGOs, FOE adopts more co-operative strategies with industries in order to improve the environment. The main purposes of FOE's co-operation with the industries are to introduce more business opportunities in environmental protection and achieve the goal of sustainable development at the same time. Staffs at the FOE keep regular contact with business leaders, debate and discuss various environmental issues with them, and help promote the "community consciousness" of firms. As indicated by Beatrice Olivastri, Chief Executive Officer of Friends of the Earth, FOE actually tries to promote the "transparency" of the industry process, and expose the process to public accountability.[72]

An unique body of co-ordinating various environmental ENGO activities is the Canadian Environmental Network (CEN). The CEN began its operation in 1977 when ENGOs formed a National Steering Committee to help facilitate meetings between environmentalists and Environment Canada. A National Steering Committee consisting of representation form the various regions governs the CEN itself. The CEN is a network of hundreds of ENGOs, each of which retains the power to speak on its own behalf. This decentralised form of organisation allows member groups to retain their autonomy and secures an objective role of the CEN itself. Hence, the CEN provides a co-operative forum for groups to share knowledge and expertise, and involve public interest groups concerned with the environment in consultations on environmental legislation, policies, and programmes. The CEN serves the function as a "liaison institution" between the government and ENGOs. A majority of the funding of the CEN is derived from the federal government of Canada through the annual Contribution Agreement from Environment Canada.[73] In addition, CEN promotes international connections between Canadian and international environmental groups. Designed to assist both Canadian ENGOs and their overseas partners, CEN's International Capacity Building Project (ICPB) creates links through international networking, provides training in project management, and furnishes information on such crucial environmental topics as climate change. Core funding for the Project comes from the CIDA's Environment and Sustainable Development Program.[74]

The influence of Canadian environmental NGOs, however, shall not be overestimated in the policy-

[72] Interview with Beatrice Olivastri, Chief Executive Officer, Ottawa, July 21, 1999.

[73] Interview with Peter Hall, National Director, Canadian Environmental Network, Ottawa, July 21, 1999. For more information about CEN, refer to CEN's website< www.cen.web.net>.

[74] Canadian Environmental Network News, Autumn, 1998, p.2.

making process. Melody Hessing and Michael Howlett argue that in spite of considerable publicity, Canadian public interest groups remain underrepresented in regulatory and policy proceedings when compared to producer groups. The establishment of various ad hoc commissions may serve to postpone or divert public attention from the issue. The discretionary character of contemporary practices of public involvement may be inadequate to ensure the inclusion of all interests. There is not yet a mechanism for ensuring that a range of environmental perspectives is represented or that their relative importance to, or impact on, the environment are assessed. An environmental "tokenism" may result in the selection or appointment of a limited number of environmental representatives. Hence, the rhetoric of public participation is primarily geared toward discretionary forms of public consultation rather than mandatory and adequately supported inclusion on formal agenda-setting bodies (Hess and Howlet 1997:123-33).

PUBLIC CONSCIOUSNESS AND SUSTAINABLE DEVELOPMENT IN TAIWAN

Different from the Canadian model of interactive decision making between the state and ENGOs, the major instrument of environment management in Taiwan is top-down command and control methods. In the process of environment management, legal basis for public participation is weak. Moreover, public attention on environmental issues focuses more on the ex post treatment of environmental impacts rather than ex ante preventive actions to protect the environment. This tendency is linked with the lack of public participation in the policy making process. The general public has no voices until some disastrous outcomes emerge. This ex post actions from the grass-root level always causes confrontation between the state and environmentalists.

However, as Taiwan transferred into a plural democratic system, the civil society has gradually regained momentum of taking part in social issues related to sustainable development. Surveys show that the environmental consciousness of the Taiwanese people has improved in the past thirteen years. According to an opinion poll conducted by Academia Sinica, 90% of the Taiwanese people acknowledge the controversies surrounding the impact of nuclear power plants on the environment (as compared to 70% thirteen years ago); more than 70% of the people agree that the establishment of highly-polluted industries must be approved by referendum; 23% of the people disagree that technology can solve every environmental issues (compared to 8% thirteen years ago); more than 70% of the people agree that the current legal framework is not sufficient to protect Taiwan's environment; and about half of the respondents agree that the government must be responsible for the worsening environment.[75] The opinion poll results show that the Taiwanese public has gradually developed a balanced concept of achieving sustainable development. At the same time, discontent towards governmental environmental protection policies remains high.

The traditional way for Taiwanese ENGOs to have their voices heard is to launch public demonstrations and grass-root resistance. The environmental movement is also closely connected with Taiwan's opposition forces to challenge the KMT rule during Taiwan's authoritarian era. However, as the opposition force became the ruling party in Taiwan after the 2000 Presidential election, the grass-root environmental ENGOs also faced new pressures to institutionalise environmental movement. In some senses the Taiwanese ENGOs supported by the former opposition parties lost their target of struggle after the political triumph of the opposition camp in 2000. For example, former Environmental Minister of the first DPP cabinet Lin Chun-I, the so called " Father of the Anti-Nuke Movement", declared that "since there is no authoritarianism now, there is no need to oppose nuclear power plant".[76]

Adopting institutionalised strategies other than public demonstration, like what the Sierra Club and Friend of Earth have been doing in Canada, become the most urgent topic for Taiwanese ENGOs. Recently new ENGOs focusing on sustainable development issues such as high-tech pollution and collaborative governance with local governments have emerged in Taiwan. Taiwan Environmental Action Network (TEAN), a new ENGO focusing on forest protection, high-tech pollution, and aboriginal people, has adopted new strategies of promoting sustainable development. Initiated by Taiwanese students in the United States, TEAN uses internet as a vehicle to ally with domestic and international ENGOs to raise important issues of sustainable development in Taiwan. TEAN and Silicon Valley Toxic Coalition (SVTC) organised a joint-task force to push forward sustainable high-tech development in Silicon Valley and Taiwan's Hsin-Chu Science Based Industrial Park. TEAN also participated in international environmental conferences to put Taiwan's environmental issues in the international context.[77]

A successful case of collaborative governance be-

[75] Lien Ho Pao (United Daily News), January 17, 2000.
[76] Lien Ho Pao, May 26, 2000.
[77] For the detailed activities and annual reports of TEAN, please refer to its web page at <www.tean.com>.

tween the local government and ENGOs is Taipei City's decision to undertake demand-side management of garbage treatment. Due to environmental and health concerns, Taiwanese environmental NGOs have led the public resistance toward building more incinerators for garbage treatment. After years of negotiation and public hearings, the city government of Taipei finally launched a new policy of collecting garbage. Instead of building more incinerators, Taipei city decided to utilise financial instruments to reduce household waste. According to new policies, all household garbage must be put in special garbage bags sold at price. Environmental NGOs have helped the city government propagate the new concept of "users pay" and have thus achieved success at this first stage. From July 1, 2000 to August 1, 2000, Taipei reduced 38% of household garbage and increased recyclable resources 400%.[78]

International participation and sustainable development

CANADIAN PARTICIPATION IN INTERNATIONAL SUSTAINABLE DEVELOPMENT

In "Agenda 2000", the Canadian government declared four major sustainable development goals: economic growth and prosperity, building peace and security, Canadian values and culture, and greening operations. In the past decades, Canada has demonstrated its leadership in encouraging international actions on the issues such as protecting the ozone layer, reducing greenhouse gas emissions, and conserving biodiversity. Moreover, Canada plays a key role of "knowledge broker" to promote ideas and actions of sustainable development. Canada worked actively in the APEC (Asia-Pacific Economic Cooperation) Environment Ministerial Meeting on Sustainable Development. The APEC Environmental Ministerial Meeting declared a joint statement on sustainable cities, sustainability of marine environment, cleaner production, and environmental sustainable growth. Through international participation, Canadian values on sustainable development could be delivered and spread to less-developed countries. Environmental diplomacy is also the realisation of moral obligation of Canada in international affairs.

In addition, Canadian initiatives in international environmental affairs provide business opportunities for environmental industries in Canada. The real momentum for the industry to promote environment-friendly ways of production comes from the market potential to adopt clean technologies. The case of Canada shows that one major approach to promoting market-oriented clean technologies is to develop international markets for Canadian environmental industries. Among various international endeavours to combine sustainable development with market benefits, "sustainable city initiatives (SCI)" is the most recent attempt made by Canada.

In early 1999, the National Round Table of Environment and Economy (NRTEE) of Canada submitted a final report and recommendations of Sustainable Cities Initiatives (SCI) to the federal government. On April 1, 1999, the Premier ordered the Ministry of Foreign Affairs and International Trade to 1) coordinate the federal departments to implement the SCI. The SCI is about recognising cities as a distinct and first-order developmental, economic, and environmental opportunity and 2) charting a course by which the economic, environmental, developmental, and political benefits can be reaped simultaneously and synergistically. Accordingly, the SCI attempts to make the urban market greater, increase the opportunities for Canadian participation of public-private infrastructure in developing countries, help Canada attain its climate change commitments and developing countries address their air quality and broader health concerns, and make Canadian development work more effective (NRTEE Sustainable Cities Initiatives Final Report and Recommendations, p.13).

TAIWAN'S PARTICIPATION IN INTERNATIONAL SUSTAINABLE DEVELOPMENT: CHALLENGES AND OPPORTUNITIES

In contrast to the active participation of international environmental affairs of Canada, Taiwan's international participation is constrained by political obstacles. In the past decades, Taiwan's participation in major international environmental organisation was handicapped by the fact that Taiwan is not a member of the United Nations. Thus, Taiwan has not been able to send official representatives to participate in any UN-related environmental conferences since 1971. Taiwan could only participate in the UNFCCC COP under the status of a non-governmental organisation. Taiwan's international isolation further distorts its rights and obligations in international environmental affairs. Taiwan also lacks institutionalised channels to reports its progress and shortcomings of environmental protection in multilateral occasions (Young 1999:2). Taiwan's absence in international environmental conferences also deprives its role to promote regional and global sustainable development.

Under these unfavourable situation, Taiwan's priority of international participation is to begin with bilateral

[78] Lien Ho Pao, August 14, 2000.

environmental co-operative relationship with industrialised countries that have no diplomatic relationship but maintain close economic interaction with Taiwan (Environmental Protection White Paper 2000:406). In the past decade, Taiwan signed various agreements of co-operation in environmental protection with US, Canada, Norway, France, Japan, and other industrialised countries. For instance, Taiwan's Memorandum of Understanding on Environmental Co-operation with Canada includes exchange of information, visits and training of personnel, development and implementation of joint projects, and promotion of co-operation in trade, industries, science and technologies for achieving a sound environment. The scope of co-operation include great varieties of issues such as environmental planning, pollution prevention, eco-labeling, environmental standards, waste water treatment, solid and hazardous waste management, and so on.

The only major international organisation which Taiwan could participate, under the title of Chinese Taipei, is APEC. From 1998 to 2001, Taiwan played the role as the Lead Shepherd in the APEC Marine Resource Conservation Working Group (MRC WG). Under the APEC framework, Taiwan has the opportunity to report its own status of sustainable development and exchange information with other Asian-Pacific countries. Similar to the Canadian initiatives of sustainable cities that put economic benefits and private-public co-operation as the core, Taiwan's participation in MRC WG also emphasised the role of private sectors in marine sustainable development.

Due to Taiwan's special status in the international society and the need to enhance market forces, Taiwan's strategy of promoting private participation in the APEC framework is a reasonable choice. Taiwan indicates that the private sector could and should play in the development of ocean and coastal management strategies. With land-based sources of pollution being a major contributor to coastal environmental degradation, the business community at large has a role to play, extending beyond those enterprises that derive a direct benefit or have a direct impact. APEC MRC WG also provides a unique opportunity for both sides of the Taiwan Straits to work together and enhance mutual understanding.

Like Canada, one of the major drives for Taiwan to expand its international outreach is the huge market benefits of environmental protection industries, especially the market on mainland China. From the political and military perspectives, relationship between PRC and Taiwan is in constant intensity. (Leng, 1999, 2001a, 2001b) However, Co-operation in sustainable development between Taiwan and China may promote confidence-building measures on issues connecting with people's welfare on both sides of Taiwan Straits. Similar to the Sustainable City Initiatives in Canada, economic benefits and private momentum may become the major boosters for further co-operation in environmental protection.

According to various surveys, China will spend more than 100 billion US dollars on environmental infrastructure construction (Economy 1999:16). In order to host the 2008 Olympic Games in Beijing, China will pour additional funding to improve the highly polluted environment. Although Taiwan is not the global leader in environmental technologies, its practical experiences in solving problems for small and medium enterprises still help maintain competitiveness in the China market. A recent report demonstrates that about 49% of Taiwanese companies choose China as their first priorities to invest on the Clean Development Mechanism (CDM) projects. Due to the fact that Taiwan is not the UN member, hosting CDM under the UNFCCC framework may involve political issues especially the opposition from PRC. However, opinion poll on Taiwanese industries shows that only 3% of the respondents answer that Taiwanese government should refrain itself from CDM if China raises political issues to question Taiwan's sovereignty(Li 2000:6). In other words, the economic benefit has become the major concern for the private sectors on the issue of environmental co-operation across the Taiwan Straits.

Geographic vicinity and cultural similarity will invest Taiwan with a unique role to serve as a liaison to introduce foreign direct investment from multinational corporations in the environmental markets in mainland China. Taiwan and advanced industrial countries have established stable co-operative relationships in environmental co-operation. This co-operative relationship could be extended to develop the market on mainland China collectively. For instance, Canada has signed agreements on environmental protection with governments on both sides of the Taiwan Straits. Taiwanese business community could invest on Canadian projects in hosting the CDM with China and avoid sensitive political controversies. These strategic alliances based on mutual economic benefits could realise domestic sustainable development and improve situation of environmental protection for developing countries at the same time. In other words, both Taiwanese and Canadian experiences indicate that increasing international participation will facilitate a win-win situation of continuous economic development and sustainable development.

Conclusion

The Taiwanese and Canadian experiences indicate that in order to achieve the goal of sustainable development, special emphasis must be put on integrating different national goals, an open process for public participation, accountability through multi-stakeholder supervision, and market-based incentives for international participation. The top-down command and control methods are not sufficient to address and tackle major issues of sustainable development. To persuade the business community to follow policy adjustments in sustainable development, creating market incentives is the key for voluntary compliance. Multiple channels of communication between the state and society are established to avoid direct confrontation. Public consciousness and constant interaction between the state and society help lay a solid foundation for continuous improvement of sustainable development.

In the last two decades of the 20th century, many developing countries experienced bottom-up movement of democratisation (Huntington, 1991; Haggard and Kaufman, 1995). Democratising changes the balance of power between state and society. However, for many cases in developing countries, demands from the civil society need to be channelled and represented in national and local politics. Otherwise, environmental and sustainable development issues could spark serious confrontation between the state and society. Environmental non-governmental organisations (ENGOs) play the role as an agent to bridge the interests of state and society (Chasek, 2000, Chapter 19, 20). Strengthening ENGOs could help spread knowledge of sustainable development, supervise business activities, and represent grass-root interests of sustainable development in developing countries. The state alone cannot carry out responsibilities of sustainable development. Collaborate governance between state and society is the pathway toward a sustainable future of development countries.

One major concern for developing countries in promoting sustainable development is that environmental protection strategies may deter economic development. However, experiences in Taiwan and Canada demonstrate that economic development and sustainable development are not necessarily in conflict. In order to obtain voluntary compliance from the business community, introducing "marketable" environmental technologies such as high-efficiency clean technologies is important to create a win-win situation between the state and business community. Given the fact that most developing countries are facing financial constraints on technological innovation, privatisation of environmental industries and attracting foreign investment on environmental infrastructure construction are potential solutions. For newly industrialised countries, increasing governmental investment on environmental investment help explore international markets of environmental industries and promote international strategic alliances on environmental products. All in all, a win-win situation is possible after careful calculation of market potential for sustainable development in developing countries.

Taiwan's achievement in economic development in the past few decades has been recognised by the international society as a "miracle" (Haggard, 1990; Gold, 1986). However, behind the rapid growth rate of economic development is the deterioration of natural resources and environment. It is time for Taiwan to develop strategies to sustain economic growth and protect the environment for future generations. Raising public consciousness and strengthening channels of interaction between the state and society are two key tasks for the government to undertake immediately. Taiwan also needs to develop energy-efficient ways of production and promote technology innovation. These policies could provide market incentives for the business community to improve the environment. International participation in international environmental affairs may also boost technological innovation and increase business opportunities for the environmental industries. A new Taiwan endeavouring in sustainable development will contribute to future generations of the Taiwanese people and the global village as a whole.

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Managing Complexities in Global Environmental Governance: Issues-Interests-Actors Network Model for the Transnational Environmental Governance in the Mekong River Commission and the International Commission for the Protection of the Rhine

by Tun Myint[*]

This article presents a study of the Mekong River Commission (MRC) and the International Commission for Protection of the Rhine (ICPR). The primary focus of this study is to analyse and explain how the issues, interests, and participation of local communities and non-state actors, such as non-governmental organisations, are incorporated or not incorporated into transnational environmental governance in the MRC and ICPR regimes. It has been argued that even though states remain central players in the governance of transnational natural resources and environmental issues, non-state actors have made particularly striking advances both in the creation of the environmental regimes and in efforts to make these regimes function effectively once they are in place (Princen and Finger 1994; Wapner, 1996; Lipschutz, 1996). Are local and non-state actors crucial to the successful governance of MRC and ICPR transnational environmental regimes? What are the institutional linkages between local, national, and transnational institutions within MRC and ICPR regimes? These are some of the questions this article will answer.

The international system, in which nation-states are the key players, is going through a period of transformation. This transformation is imposed by the phenomena of democratisation, economic globalisation, environmental degradation, and regional integration (Held and McGrew, 2000; Keohane, 1995; Krasner, 1995; Sakamoto, 1994). This global transformation is shaping the future of nation state, as well as the future of the international system. To meet the challenges of global transformation, Keohane (1995:119 in Held and McGraw, 2000) argues that the "key problem of world order now is to seek to devise institutional arrangements that are consistent both with key features of international relations and the new shape of domestic politics." In his presidential address to the 2000 American Political Science Association Conference, Keohane further asserts that, "the effective governance of global issues will be dependent upon interstate co-operation and transnational networks" (Keohane, 2001:1). Global transformation, as described by respected scholars of the field in *Global Transformation Reader* edited by Held and McGrew (2000) and in *Global Transformation: Challenges to State System* edited by Sakamoto (1994), means that the traditional international regimes that are built by the power of states and the inter-state relations have become ineffective institutions, especially in regard to global environmental issues. In dealing with global environmental issues, Princen et al. (1994: 221) argues: "global solutions require local approaches when global environmental crisis results from both the aggregation of local resources decisions and from the impact of the global political economy on local communities." This raises the question as to whether transnational environmental regimes that are designed to foster interstate co-operation and transnational networks, such as the Mekong River Commission (MRC) and the International Commission for the Protection of the Rhine (ICPR) are desirable or effective forms of governance for global environmental issues, that are simultaneously linked to the local context.

The transnational regimes such as the MRC and ICPR are designed to govern transnational resource—rivers. Within these transnational regimes, there are three layers of governing institutions—local, national, and transnational layers. These layers are institutionally interconnected for the governance process of transnational regime. Within each layer, issues, interests, and actors shape political processes. The presence of these important elements and actors as well as the strength of networks among them is dynamic process. This whole dynamic process, I will define, is "governance process." Governance by governments of states has been the traditional study of the international affairs. However, governance nowadays is a phenomenon of managing and networking issues, interests, and actors to produce actions that are transparent in process and effective in achieving stated goals of regimes. This article attempts to develop a model to explain transnational environmental governance by examining issues, interests, and actors in MRC and ICPR regimes.

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The puzzle

The subject of global environmental governance has been chiefly dominated by the study of environmental regimes. Political scientists' works advance the study of international regimes. Their emphasis was to understand and theorise how international affairs may effectively be governed by regimes that are designed to achieve stated goals and objectives. Their interest is in how co-operation among sovereign states can be augmented in order to solve problems that are transnational in nature (Hisschemoller and Gupta, 1999: 151; Sprintz and Helm, 1999: 359; Martin and Simmons, 1998: 742). Peter Haas in 1989 posed the question: Do regimes matter? Haas' fundamental question maintained the study of regime to address whether regimes make any difference to the international environmental affairs to which they address. Young (1999: 249) answered Haas' question:

> We can state without hesitation that regimes do matter in international society, so that there is nothing to be gained from perpetuating the debate between neo-institutionalists and neo-realists about the 'false promise of international institutions' (Mearsheimer, 1994-1995).

If regimes do matter, are they effective? The later emphasis on the effectiveness of international regimes is multiplied by the emergence of globally concerned issues such as environmental degradation, trade disputes, disease control, and conflict resolution. These global crises not only require international co-operation but also demand actions beyond traditional diplomacy. The traditional study of international affairs is confined to the study of power and diplomatic relations among sovereign states. However, regime analysts look beyond a realist approach to the study of international affairs and further advance a transnational perspective to global governance by drawing insights from the experiences of international environmental regimes (Young, 1997). As Michael Zürn asserted in a major review of the progress of research on international environmental politics, study of regime effectiveness has become the "driving force" (Zürn, 1998: 649) in the analysis of global environmental governance.

The study of regime effectiveness that Zürn (1998: 649) refers to as "driving force" in environmental governance has focused significantly on the attainment of the stated goals of regimes (Bernauer, 1995: 369). However, the definition of regime effectiveness will not be complete without the study of the process of governance involved in transnational environmental regimes. Stated goals can be achieved by an authoritarian regime or by a supranational authority, but environmental governance in the global context must address equity issues (or the issue of democratic deficit) among regime actors in multiple layers. The successes or failures of transnational regimes are predominantly determined by how resources are used and managed at the local level. Therefore, understanding governance process of regimes will help us in our study on regime design that matter in carrying out stated goals.

If regimes do matter, what types of regimes (institutions) work better for transnational environmental governance? Regime design has become current state of debate on environmental governance across the field. Variations among different scales and different types of regimes produce different outcomes. At the local level, some resources appropriators (or users) find ways to use resources in a manner that is sustainable overtime and some are not (Ostrom et al.,1999). In similar fashion, it is still unresolved why some international regimes are successful and some are not (Young, 1994). In essence, regime design matter (Mitchell, 1994) for the global environmental governance. They matter not only for effectiveness but also for equity and fairness in governance process. That is appropriation of resources among stakeholders in fair process and efficient manners. Keohane (2001: 12) further argues that "effective and humane global governance arrangements are not inevitable" but rather regimes (institutional arrangements) must be designed. However, regime design will make sense only to the extent that it involves "an understanding of the ways institutions are likely to work in practice." (Young, forthcoming: Chapter 1, p. 5). Therefore, the design of regimes governing transnational environmental resources must be sensitive to and reflective of the economic, political, and social contexts within which regimes operate.

Environmental governance is inherently a political process. Furthermore, it is a unique political process because the natural environment or bio-geophysical systems is essentially non-human actor. Young (forthcoming, Ch. 3) articulates this uniqueness of environmental governance by labeling as a "problem of fit" i.e. whether the institutional arrangements designed to solve environmental problems are congruent with the bio-geophysical systems they address. However, there are two parts in the "problem of fit" in dealing with governance of environmental issues. The first part is whether the environmental regimes that are designed to serve human beings fit the economic, social, and political contexts within which they operate. The second part is whether the environmental regimes fit the bio-geophysical systems they address. Therefore, the "problem of fit," as a whole, must address these two parts simultaneously.

In other words, regimes that are designed to solve global environmental problems must fit both human systems and bio-geophysical systems they address. This "fit" puzzle is the reason to investigate whether the Mekong River Commission (MRC) and the International Commission for the Protection of the Rhine (ICPR) fit human systems and bio-geophysical systems they address.

Which part of the whole "problem of fit" is more important than the other is an interesting question. In this article, I would argue that the first part of the problem of fit as a whole is rather important, especially from the dimension of governance process. I might even further assert that the second part of the whole problem of fit is dependent upon how fit the first part is. If environmental regimes fit the human systems, they are more likely to achieve the second part of the whole fit that is fitting bio-geophysical systems. Therefore, in this article, I will pay attention to deeper analysis of how issues, interests, and actors play dynamic process of environmental governance in the MRC and ICPR regimes. In so doing, the focal question to answer is: Are local and non-state actors crucial to the success of environmental governance in MRC and ICPR?

Defining issues, interests and actors

Before I analyse how issues, interests, and actors interplay in transnational environmental governance of MRC and ICPR, it is necessary to clarify the definitions of these terms. "Issue," according to the *American Heritage Dictionary* edited by William Morris and first published in 1969, is defined as "a point of discussion, debate, or dispute; a matter of wide public concern; culminating point leading to decision." Based on this definition, I define "issue" as a problem or a matter that calls for solution. For the definition of "Interest," I consult with the online edition of the Oxford English Dictionary and it is defined as "the relation of being objectively concerned in something, by having a right or title to, a claim upon or a share in" (http://calliope.ucs.indiana.edu/oed/). Based on this definition, I define "interest" as state of possessing reasoned stake or share in something. Actors are all concerned participants whose decision-making capacity and interests are affected by policy and law of institutions. Actors are essentially stakeholders in governance process.

Issue, interests, and Actors Network (IAN)

Two sources of literatures serve a starting point to theorising about the interplay of issues, interests, and actors in environmental governance process of MRC and ICPR regimes. The first source is the works of Arthur F. Bentley who pioneered the study of "group interest" to explain political process of pressure groups on three branches of the United States government. In his work, *The Process of Government*, published in 1908, Bentley asserts, "there is no group without its interests… The group and the interest are not separate... If we try to take the group for analysis without the interest, we have simply nothing at all" (Bentley, 1908:211-213). For the study of governance process of MRC and ICPR, the fundamental elements of analysis are institutions or formally and informally established groups. Their interests cannot be ignored for analytical purpose for scholars and practical purpose for practitioners in MRC and ICPR. Bentley argues that special interests are "raw materials of politics." I might further assert that they are raw materials of effective and fair process of governance. Bentley believes that political campaigns of local activists and lobbyists, their acts of pressures and persuasion, conflict and collusion are not to be denounced or deplored but to be described and understood. In a democratic governance system, interests of politicians and elected representatives collectively become engine of governance. Therefore, the study of governance process must analyse the dynamic interplay of interests in relation to issues and actors.

The second source of literature is the works of Harold D. Lasswell on "law, science, and policy." In a series of unpublished lecture notes that are compiled and documented at Indiana University School of Law in 1954, Lasswell explains what he calls "social process" as a mechanism by which "persons influence one another to pursue values." He writes:

> When two persons influence one another, we speak of process as social. In a world shrinking at an ever-accelerating rate because of relentlessly expanding, imposing technology, the people of the globe as a whole constitute a world community, which in turn is composed of myriad of smaller communities. Acting as individuals and in concert, the participants in all social processes, large and small, pursue values through institutions using resources. (Lasswell, 1954: Part II, Ch. I, p.1).

Social process, Lasswell explains, is the mechanism by which individual persons (actors) pursue values in society. In essence, Lasswell's assertion conveys that actors are mainly guided by the value they uphold in society. However, actors' choices are always constraint by either issues or interests.

Interests are mainly economic driven, issues are socially and politically crafted, and actors are value oriented in the interplay of Issues, Interests, and Actors Network (IAN) model. When there are strong

presence of issues, interests, and actors for a particular environmental problem in each layer of transnational regime, there is likelihood of achieving an effective co-operation among actors for the environmental governance. In a world of highly interdependent heterogeneous forces that shape process of governance, the governance process has to be fair. The fairness of the governance process is a crucial parameter for the fitness of regimes to the social, political, and economic contexts within which regimes operate.

Network refers to a complicated intermingling of lines, linkages, passages, roads, individuals, and layers of institutions that make regimes possible to achieve certain objectives that require various independent elements (issues, interests, and actors) to work together in co-operation. If various issues, interests, and actors have to function effectively, there must be institutional arrangements that enable them to work in unison. This unison could be established when actors are willing and able to work with interests and issues transparently. Constructive co-operation of various actors is possible only when a free flow of information is possible and democratic that allows linkages between IAN to develop and design a transnational governance mechanism.

Based on preliminary findings from my research in summer 2000 in MRC and 2001 in ICPR, environmental governance process can be explained by analysing Issues, Interests, and Actors Networks (IAN) within each layer of transnational environmental regimes. Regime governance process (RGP) is composed of dynamic web of IANs in each layer of transnational regime. It can be logically notated as follow:

$$RGP = IAN_L + IAN_N + IAN_T$$

In regime governance process (RGP), IAN_L represents the network of issues, interests, and actors in local layer of transnational environmental regime. IAN_N indicates the network of issues, interests, and actors in national layers of transnational regime. And IAN_T represents the network of issues, interests, and actors in transnational layers. If there is absence of IAN in one layer of regime, then that particular regime is less likely to achieve stated goals by means of fair and efficient governance process. The success of RGP is dependent upon how IAN in each layer of regime actively function. In a form of network, issues, interests, and actors interdependently shapes one another to become engine of governance process as shown in Figure 1 below. By analysing regime governance with IAN model, we will find that issues finally become agenda, interests become essentially organised interests, and actors become stakeholders (Figure I). The important assumption in the process is that although issues, interests, and actors are interdependent, they do not have absolute control over one another.

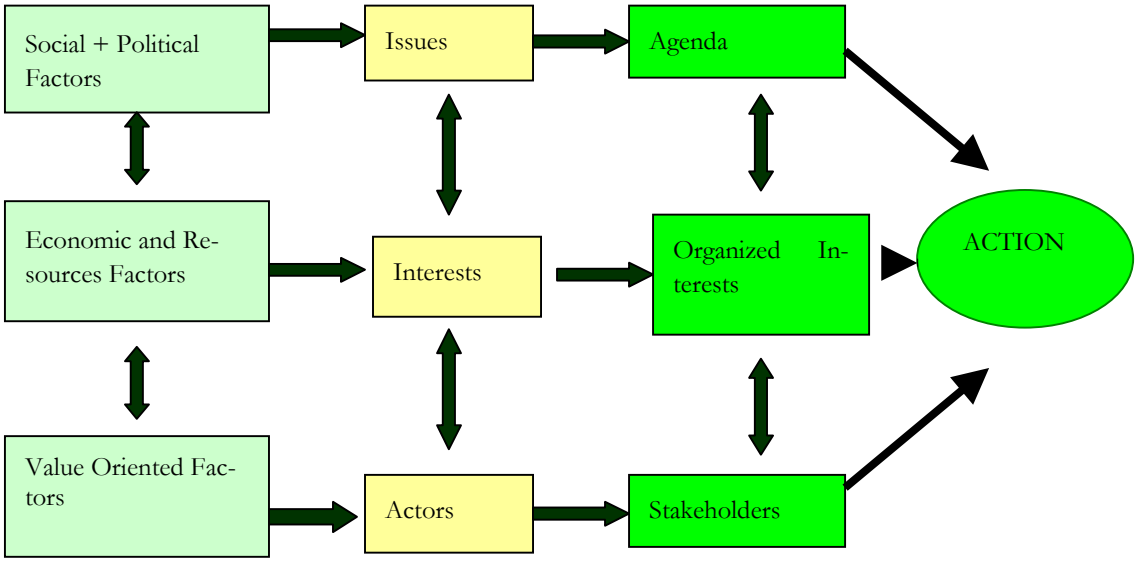

Figure 1: Process of Issues, Interests, and Actors Network

Institutional Evolution of the Mekong River Commission

The Mekong is the world's twelfth longest river. Originating from its headwaters on the Tibetan Plateau, it runs 4,193 kilometres south through Yunnan Province of China, Myanmar (Burma), Laos P.D.R., Thailand, Cambodia, and Vietnam. More than 50 million people depend upon the Mekong River and its tributaries for food, water, transport, and many other aspects of their daily lives. The Mekong River basin is the second richest in biodiversity among the world's river basin area.

The Mekong River Commission (MRC) has evolved through three stages of institutional building. The first stage began with the establishment of transnational governing body known as Mekong Committee (MC) in 1957, initiated by the United Nations. The original Committee members were Cambodia, Laos P.D.R., Thailand, and Vietnam. The Mekong Committee originated within the Bureau of Flood Control of the United Nations Economic Commission for Asia and Far East (ECAFE), now known as United Nations Economic and Social Commission for Asia and Pacific (ESCAP). The Mekong Committee was the first transnational governing body in the region and thus it is arguably a pioneer in regional co-operation in Southeast Asia.

The second stage of evolution came at the end of the second Indo-China war and the triumph of North Vietnam over South Vietnam. Communist victories in Cambodia, Laos, and Vietnam in 1975 almost ended the Mekong Committee (MC) as the three Communist states refused to participate in the functions of the Committee. However, with the diplomatic negotiations initiated by the United Nations, the Mekong Committee was transformed into Interim Mekong Committee (IMC) composed of Laos, Vietnam, and Thailand in 1978. The 1978 IMC Statute called for the reactivation of the Mekong Committee when Cambodia rejoined.

The third stage of institutional evolution emerged when the Cold War was winding down in Southeast Asia. This geopolitical transformation opened up new prospects for co-operation in Mekong region. As the rivals in the Cambodian civil war signed a peace agreement in Paris in 1991, Cambodia prepared to reenter the Mekong regime. Once again, negotiations initiated by the United Nations took placed in various stages to reconstruct Mekong regime. The series of negotiations led to a political agreement that the lower Mekong riparian countries—Cambodia, Laos P.D.R., Thailand, and Vietnam—signed the Mekong Agreement to establish the Mekong River Commission (MRC) on April 5, 1995 in Thailand. With this final stage of institutional establishment, MRC replaced the Mekong Committee established in 1957 and the Interim Mekong Committee established in 1978. China and Myanmar did not seek to join the MRC, as these two countries do not view the benefits of joining into the regime.

MRC programmes

MRC's objective is "to cooperate in all fields of sustainable development, utilisation, management, and conservation of the water and related resources of Mekong River Basin" (1995 Mekong Agreement). In order to achieve these objectives and to implement the Mekong Agreement, MRC has launched three core programmes that call for the active participation of national and local communities.

First, in accordance with the Articles 5 and 6 of the Mekong Agreement that mandates water utilisation and ecological protection, MRC inaugurated the Water Utilisation Program (WUP) in 1999. The 1999 MRC Annual Report alleges that the WUP will be "a major test-case for the potential for regional co-operation on the development and use of the Mekong river basin resources. Its implementation will also be a major test-case on the effectiveness and relevance of the Mekong River Commission itself."

Second, along with WUP, MRC began to launch Basin Development Planning (BDP) in 2000 and it is targeted to complete in 2003. BDP is envisioned as both a general planning tool and a process which will be used by the Joint Committee as a blue-print for identifying and prioritising programmes and projects at basin-wide level in order to realise the sustainable development of the Mekong region (1999 MRC Report). The Secretariat office is responsible to assist the Joint Committee with technical and administrative works to accomplish BDP. The third major programme that is being implemented is MRC Environmental Program (MRC-EP). MRC-EP will provide scientific data and technical advise to the MRC so as to be able to carry out programmes and projects in sustainable ways. MRC-EP therefore is the key programme that addresses the environmental impacts of other MRC programmes such as dam projects, irrigation, and water utilisation programmes. In addition to the three core programmes, there are five area programmes. These are the Fisheries Program, the Agriculture, Irrigation, and Forestry Program, Water Resources and Hydrology Program, Navigation Program, and Tourism Program.

International commission for the protection of the Rhine

The Rhine is Western Europe's largest river, with 1,326 kilometre in length. Beginning from its origin in the glaciers of the Swiss Alps, it constitutes the border between Switzerland, Liechtenstein, and Austria till it reaches the Lake Constance (Bodensee). It then continues to form border between Germany and France after leaving Basel to flow through a large part of western Germany, and finally crosses into the Netherlands and pours into the North Sea. The Rhine's catchment area covers 224,00 square-kilometre and encompasses parts of Italy, Luxembourg, and Belgium. The catchment area provide habitat for about 60 million people in addition to other living organisms.

The Rhine offers a variety of uses for human and other inhabitants in various ways. The Rhine was important for water transportation and it still is densely used as a shipping route with the world's largest seaport, located in Rotterdam, at its mouth. Although the problems with the quality of water in the Rhine were already recognised in the 15th century, it was not until 20th century that the advanced stage of water pollution in the river became a political agenda (Wierks and Schulte-Wülwer-Leidig, 1997). Europe's industrialisation process had great impact on the Rhine ecosystem. By the early 1960s, the pollution of the Rhine by organic substances had lowered the level of dissolved oxygen below normal and as a consequence, almost all-aquatic life had disappeared from the river. Other threats to the Rhine ecosystem came from chemical industries located on the riverbanks while large amount of heavy metal compounds, pesticides, hydrocarbons, and organic chlorine compounds were discharged into the river (Wierks and Schulte-Wuer-Leidig, 1997). This obviously caused further ecological problems, notably the disappearance of native fish species and the continual deterioration of the water quality. By the end of the 1960s, the Rhine earned unflattering reputation of being the "sewer of the Europe" (Wierks and Schulte-Wuer-Leidig, 1997).

Emergence of international co-operation

The deterioration of the Rhine's water quality and degradation of natural resources were the obvious reasons that the Rhine's future laid in effective international co-operation. Looking at the historical evolution of the relationship between ecosystem of the Rhine and of human inhabitants, the end of World War II marked the beginning of the Rhine's new chapter in its history. In 1950, with an initiative from the Netherlands, the riparian countries of the Rhine downstream of the Lake Constance—Switzerland, France, Germany, Luxembourg (through tributary river Moselle), and the Netherlands—joined forces by establishing, a rather informal basis, the International Commission for Protection of The Rhine (ICPR).

During the first decade of the founding of ICPR, it served as a common forum for discussing questions and seeking solutions relating to pollution in the Rhine. However, in 1963, the ICPR parties concluded that the existing tools for co-operation among governments should be strengthened and formalised the Commission's existence by an agreement at Berne, and transformed it with a permanent joint secretariat at Koblenz, Germany (de Villeneuve, 1996: 444). In the ICPR agreement signed at Berne, the ICPR was entrusted with the tasks to launch scientific study of the river and its ecosystem and to prepare for further agreements to revitalise the river.

In 1976, the ICPR agreement was amended to enable the European Economic Community (EC, the predecessor of the EU) to join. The EC's accession to ICPR became inevitable in view of its newly developing environmental regulations particularly in the field of water pollution within EC jurisdiction (de Villenueve, 1996: 445). As a consequence of the new development of an environmental regulation regime within EC jurisdiction, its member states can no longer conclude agreements with non-EC states, such as Switzerland. Therefore, EC's participation in ICPR was important for ICPR's future as well as for the uniformity of EC's environmental regulation regime itself. The EC commission, since then, fully participates in ICPR and shares its costs. In matters falling under EC competence, it exerts its voting right on behalf of those of EC member states in ICPR (all ICPR states except Switzerland).

With the five member countries plus the European Union, ICPR regime has transformed through treaty-type regime to action-oriented regime. There are three major mechanisms the ICPR environmental governance. The first two are legally binding treaties—the 1976 Convention for the Protection of the Rhine Against Pollution by Chemical Pollution (herein after "Chemical Pollution") and the 1976 Convention for the Protection of the Rhine Against Pollution by Chloride (hereinafter "Chloride Convention"). The third and the most famous one is the Rhine Action Program inaugurated in 1987 and ended in 2000, which is non-binding action oriented programme. These three regime designs for the ICPR environmental governance are the central focus of my analysis using IAN model.

Issues, interests, and actors in 1976 chemical convention

The aim of the 1976 Chemical Convention was to reduce the pollution of the Rhine by gradually eliminating discharges of hazardous chemical elements including heavy metals from chemical industries, community sewage systems, and agricultural land. The means of achieving these goals was the formation of a black and a gray list that were to be regulated. Black list was to include most toxic chemical substances and to be dealt as a priority to reduce discharge into the Rhine. The gray list was to include chemical substances that were less toxic but still need regulation. However, the implementation was met with difficulties.

At the transnational level within three decades of emergence of ICPR regime, the key issue was building trust among national delegations. Trust building among the member states took enormous amount if time and efforts according to Mr. Pieter Huisman, a former secretariat of the ICPR, who was actively involved in ICPR from 1971 to 1985. Another important issue why the 1976 Chemical Convention was not successful as it aimed was because of the lack of political will at the national level. Environmental issues at the time were not so important to the national economies while the industrialisation was at its peak for building stronger economies in member countries. According to Mr. Huisman, getting all countries to come together at the meeting and to discuss about the Rhine pollution was already significant enough at the beginning. However, this happened not entirely due to the national will but local "pressure groups" were key players in raising issues of the Rhine pollution publicly.

Institutional Layers	Issues	Interests	Key Actors
Transnational	- Chemical pollution of the Rhine (83 in black list)Building international co-operation - Industrial compliance	- Downstream pressure - Cost of effluent limit - Regional approach for cost sharing	- ICPR - Germany and Switzerland - The Netherlands - National Delegations
National	- Lack of political will - Lack of trust to other member states - Perceived as international problem	- Cost of regulation - Pressure from chemical industries - Pressure from water supply companies (the Netherlands)	- Ministerial - Municipal - Industries
Local	- Drinking water supply - Public health - Sewer image	- Cost of compliance - Cost of drinking water - Health risk - Recreation	- Chemical industries - Water supply industries - Communities of interests - Local NGOs

Table 1: Issues, Interests, and Actors Network in Chemical Convention

Another issue at the negotiation meetings was the issue of whether the industries were capable, in terms of resource and technology, to implement pollution reduction aimed by the Chemical Convention, especially implementation of effluent limit. The effluent limits set the maximum allowable limit to the content of pollutant chemicals in the discharged wastewater from industries. This is different from the general water quality standard. If industries were to discharge wastewater into the Rhine, that contains pollutant chemical more than effluent limit, the effluent fee is accessed. For many industries, paying that effluent fee was not a major issue (Verweij, 2000: 116). However, the major issue was the capacity to reduce content of pollutant chemicals entirely. For ICPR, pressured by downstream country, the Netherlands, the solution is not about accessing effluent fees but about cleaning the River Rhine by reducing discharge of 83 blacklisted chemicals.

Meanwhile, German delegation was suggesting to implement EU wide effluent limit according to Mr. Huisman. The sensible reason is that the German industries were behind the German delegation to establish EU wide standard. If the effluent limit applied only the Rhine basin industries, they would be at disadvantage to other EU chemical industries in the common market, which were not in Rhine basin areas, such as the British chemical industries for in-

stance (Dieperink, 1995; Verweij, 2000: 83). Therefore, the EU regional approach was discussed. This analysis makes sense further when one contemplates why then European Community joined ICPR as a full-fledged member in 1976. Because EU became a member of the ICPR, it was feasible to discuss the regional approach for effluent limit as suggested by the German delegation.

The 1976 Chemical Convention, however, was finally stalled due to the conflict that arose out of Chloride pollution between the Netherlands and France in 1979 when the Netherlands called back its ambassador from Paris for consultation. However, major reason for failure of the 1976 Chemical Convention is that all the relevant issues and actors were not in the whole process of the negotiation and implementation. Neither NGOs nor the industries were invited and regarded as important actors in the process at national and transnational layers. ICPR regime was functioning with state-centred approach as if states were the most important players in the transnational environmental governance. In addition, the binding nature of regime design was an indicator that member countries did not trust each other or there would have been serious free-rider problem. A lesson from the 1976 Chemical Convention is that the environmental governance cannot be successful without participation of all other relevant issues, interests, and actors across three layers of regime.

Issues, interests, and actors in 1976 Chloride Convention

The main agenda of the Chloride Convention focused on the Alsatian mine company, the Potasse de'Alsace, in France, which was responsible for 35 to 40% of the total discharge of 400 kilogram per second (kg/s) into the Rhine. The Chloride (salt) discharges were especially harmful to the interest of several Dutch water companies, flower growers, and the port of Rotterdam. Therefore, the Chloride Convention focused on the discharge of the Potasse de'Alsace. According to the negotiated treaty, the discharges of the mine company were to be cut by 60 kg/s in three phases. In this process, the salts that were not discharged into the Rhine were to be injected into the Alstian earth. The estimated cost was 132 million French francs. The agreement was that the Netherlands would finance 34% of the project, Germany and France would each pay 30% of the costs, and the Switzerland would pay remaining 6 % . For a number of years, French government was reluctant to consider Alstian salt and the Rhine issue into the agenda of parliament for ratification. French government faced two issues at the national parliament. The first was rising unemployment in France and the second was the labour strike in Alatian mine. As a result, France stalled to honour the agreement. This causes direct conflict with the Netherlands as it was facing heavy pressure from local water supply industries and the port of Rotterdam. The Dutch government recalled its ambassador from Paris for consultation and the relationship between Franc and the Netherlands at worst in light of the Chloride Convention.

Institutional Layers	Issues	Interests	Actors
Transnational	- Conflict between NL and FR - International co-operation - ICPR's role challenged	- Cost of operation - Downstream pressure - Defining responsible party to pay for cleanup	- ICPR - France - The Netherlands - National Delegations
National	- Lack of political will - Unemployment in labour strike in France - International problem	- Damage to farm land - Pressure from water industries - Pressure from Alsatian mine workers - Faith of ICPR regime	- Diplomats - Ministries - Municipals - Water supply and mining industries
Local	- Drinking water supply - Public health - Agriculture	- Cost of water purification - Loss of agricultural land from salinisation in NL	- Local farmers - Alsatian mining industry in FR - Water supply industries in NL - NGOs

Table 2: Issues, Interests, and Actors in 1976 Chloride Convention

The 1976 Chloride Convention is the least favourite topic that leaders of ICPR today want to talk about. When asked about the 1976 Chloride Convention, Dr. Ann Schulte-Wülwer-Leidig, the current deputy

Secretariat of the ICPR, indicated it as "the worst experience" of the ICPR regime because it caused many other obstacles that are far from Chloride case. As if the whole ICPR regime was stalled, no other issues were possible to discuss due to intense conflict on Chloride issue. The key problem once again was the lack of political will within member states, especially in France. On top of that, low level of trust and co-operation among the member states were also the reasons for difficulties.

Issues, interests, and actors in the Rhine Action Programme

The historic moment for the ICPR's further development as an effective transnational regime was perhaps sparked by the Sandoz chemical accident. 200 kilometers stretch of the Rhine became ecologically dead (Glass and Snyder, 1996, de Villeneuve, 1996). This disaster received large press coverage, and the ICPR parties reacted swiftly. On November 12, 1986, the ministers jointly held meetings and assessed the remedial process. At the same time, Sandoz's chief executives joined the ministerial meeting and explained what went wrong. As the incident triggered a wave of publicity in all the countries bordering the Rhine, political attentions was altered and within a very short-time more than three ministerial conferences were addressing the issue of The Rhine pollution. With environmental issues high on political agenda in many countries in the mid -1980s, the Sandoz accident in 1986 spurred the ICPR to implement the Rhine Action Program for Ecological Rehabilitation adopted in 1987 (ICPR).

The combination of political opportunity, the Sandoz accident, the existence of an institutional framework, and the extensive and responsive preparatory work carried out by the ICPR set out the stage for the emergence of the Rhine Action Program (RAP). The Rhine Action Program for Ecological rehabilitation was symbolised by the slogan "LACHS 2000" (Salmon 2000) denoting the return or reintroduction of salmon to the Rhine by the year 2000. With the symbolic call for the return of salmon, the RAP not only aimed to cleanup the River but also required member states to eliminate physical barriers such as weirs and locks for fish passage. Therefore, the reintroduction of the salmon presupposes high water quality and restored hydrological and morphological conditions (Van Dijk, 1995). Since the return of salmon requires the restoration of a complex set of conditions, the ICPR has elaborated on its goals in the Ecological Master Plan for the Rhine.

By 2000, the success of both RAP and pollution control programmes were reported. The UNESCO Courier in June 2000 called it the "Miracle of the Rhine," reporting the findings of scientists that salmon and other species of fishes had returned to the Rhine's water (Weber, 2000). The environmental media watching the ICPR's programmes reported RAP as a "model for future," (Glass and Snyder, 1996). Modelling after the success of the transnational co-operation among the Rhine countries, the European Union issued a water directive in June 2000.

Institutional Layers	Issues	Interests	Actors
Transnational	- Transparency of all Rhine issues - NGOs participation and public education - Monitor member states' implementation - Maintain mutual trust	- Ecological loss - Revitalisation of the Rhine ecosystems - To maintain and increase co-ordination among actors	- ICPR - EU - National Delegations - NGOs - Industries
National	- Building fish passages by removing weirs and locks - Enforcement of domestic regulations	- Reduce long-term cost - To maintain national integrity and value	- Ministerial level - Municipal governments - Industries - National NGOs
Local	- Demand for recreational activities - Demand for drinking water	- Ecological health of the Rhine - Environmental awareness and value of the Rhine	Organised water supply industries (IAWR) Organised chemical industries

Table 3: Issues, Interests, and Actors Network in the Rhine Action Programme

Why was RAP successful compared to previous two treaty-type regimes? The answer to this question can be explained by mapping three ICPR regimes with IAN model (Table 1, 2, and 3). In previous two treaty-type regimes, there were no formal and informal linkages between actors across three layers. At the transnational level, regime had no support from member states since they did not trust each other. At the national level, there was lack of political will to consider the pollution of the Rhine into national

political agenda. At the local level, the local and non-state actors were less organised since there was no political incentive because they could not directly influence or pressure other national governments other than their own. Actors across three layers are disconnected, issues across three layers had lack of political supports, and interests of stakeholders are constrained by the rigid institutional boundaries in treaty-type regime. RAP transformed previous two treaty-type regimes into action-oriented regime. Overall ICPR Regime design was changed in RAP.

Institutional Layers	Actors in Chemical Convention	Actors in Chloride Convention	Actors in RAP
Transnational	- ICPR - National Delegations - Germany, Switzerland, and the Netherlands	- ICPR - National Delegations - France and the Nether-lands - Diplomats	- ICPR - EU - National Delegations - Local and Transnational NGOs - Industries
National	- Ministerial - Municipal governments - Industries	- Ministerial - Municipal governments - Water supply and Mining industries	- Ministerial level - Municipal governments - Industries - Transnational and Local NGOs
Local	- Local farms - Chemical industries - Water supply industries - Communities	- Local farmers - Alsatian mining industry in France - Water supply industries in the Netherlands - Local NGOs	Organised water supply indus-tries (IAWR) Organised chemical industries Organised Local NGOs

Table 4. Comparison of actors across three types of ICPR regimes

If we look at actors in RAP comparatively with previous two treaty-type regimes, we observe that local and non-states actors are incorporated into all the way up to transnational layer (Table 4). The interconnected network of issues, interests, and actors in the RAP significantly increased ICPR regime's fitness to social, political, and economic contests. It also contributed to improvement of water quality of the Rhine to facilitate the return of Salmon.

Conclusion

The issue of water quality of the Rhine was not primary political and social concern in the context of pre-1950 Rhine regime. The issue of navigation and fishing quota were perceived as problems for many countries at that time. Only in the 1950, the government of the Netherlands took the water quality issue as a serious agenda for international affairs and initiated the establishment of ICPR. Even though the issue of water quality of the Rhine existed since industrialisation began along the bank of the river, no political institutions raised as this issue to be solved by means of the international co-operation until the Dutch government politicised it. The interest in the cost of purification process for the water supplies companies in the Netherlands, the Dutch government was positioned to take water pollution issues into the international political agenda among the Rhine riparian countries. As a lowest downstream country, the Dutch government has its legitimate interest to raise it to the international level.

In the Mekong river basin area, such issues as environmental degradation in terms of water pollution and ecosystem destruction are still in the stage of infancy. That is these issues have yet to become policy agenda in local and national layers. Compared to the Rhine regime, the Mekong regime is at the preventive stage of such an environmental issues as water pollution. The Rhine regime, on the other hand, is at the stage rehabilitation. Whether MRC regime will be able to achieve stated goals, as did ICPR regime, has yet to be seen. As we have observed in ICPR regime, the success of MRC will depend on how regime incorporates issues, interests and actors across three layers into governance process.

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Implications of the Nation-State System on Public Involvement in Environmental Problem-Solving

*by Elin Kelsey**

International environmental agreements are the primary mechanism of global environmental governance. The number, range, complexity and political significance of international environmental agreements have increased enormously on a bilateral, regional and global basis since the early 1970s (UNEP, 1991; Birnie and Boyle, 1994; Werksman, 1996). While debates about the causes and consequences of environmental issues proliferate, there is no question that international environmental agreements are now a dominant factor in international affairs (Birnie and Boyle, 1994; Werksman, 1996).

International environmental agreements reflect a set of principles, norms, rules and procedures between nation-states. Agreements that have emerged since the 1992 United Nations Conference on Environment and Development (UNCED) reflect formal recognition of the importance of the public in global environmental affairs, and the need for public education (Sand, 1990; Thomas, 1994; Brohman, 1996; French, 1996; Callicott and da Rocha, 1996; Jamison, 1997).

Discourse analysis rests on the contention that language matters, and that the way we construct, interpret, discuss and implement policies related to education, the public and the environment, has consequences. Thus, it is the articulation of the principles and norms by which nation-states agree to address global environmental issues that makes international environmental agreements a valuable context through which to investigate public involvement in environmental problem-resolution.

SPECIFIC AGREEMENTS UNDER INVESTIGATION

The specific agreements analysed for this article are as follows:

- The *Convention on Biological Diversity* (CBD) signed in 1992 under auspices of the United Nations Environment Programme (UNEP), and more specifically, the *Global Initiative for Implementing Biological Diversity Education, Training and Public Awareness* (*the Global Initiative*) which is an implementation strategy for education prepared by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in 1998 in response to a directive from the Conference of the Parties to the CBD (www.biodiv.org/; www.unesco.org/);
- The *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* (*the Århus Convention*) signed in 1998 under the auspices of the United Nations Economic Commission for Europe (ECE) (www.unece.org/);
- The *Draft Framework for Public Participation in the Commission for Environmental Co-operation's Activities* (the *CEC Framework*) signed in 1999 under the auspices of the North American Free Trade Agreement's Commission for Environmental Co-operation (CEC) (www.cec.org/).

The rationale for choosing these particular conventions and frameworks is as follows:

The CBD is a United Nations Convention. The CBD is the largest international environmental agreement to date in terms of both scope and participation. More than 170 signatories signed on to the Convention and it deals with all aspects of the diversity of life on Earth. It is also the first international environmental agreement to include a specific article on public education—*Article 13: Public Education and Awareness*. The specific document informing this study is *A Global Initiative for Implementing Biological Diversity Education, Training and Public Awareness* (the *Global Initiative*). The *Global Initiative* is a "strategy document for the implementation of relevant Articles of the Convention on Biological Diversity (CBD) and Decisions of its Conference of the Parties in the area of education, training and public awareness" (UNESCO, 1999).

The *Århus Convention*, is also a United Nations Convention and it is the first to deal specifically with the issue of public participation in environmental decision-making. It specifically operates within a European context and represents an agreement between thirty-nine countries as well as the European Community. It is the first UN/ECE environmental agreement to impose obligations on its Parties vis-à-vis its own citizens. It contains obligations—more so than traditional environmental conventions—on the

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part of the public authorities towards the public at large. It also crosses a broad range of environmental areas, such as water, air, soil, chemicals, biodiversity, human health and living conditions.

Like the *Århus Convention*, the CEC's *Draft Framework for Public Participation in the Commission for Environmental Co-operation's Activities* deals specifically with the issue of public participation in environmental decision-making. In this case, however, the context is North America and the governing body is the North American Free Trade Agreement, rather than United Nations. It is the first environmental dispute mechanism to address public participation with respect to the environment in a tri-national, North American context.

Thus, the rationale for the selection of these three agreements is as follows:

- Current Thinking: These three agreements, at the time of writing, are the most current international environmental agreements to deal specifically with education or public participation.
- Global, European and North American Contexts: The three agreements operate within a global, European or North American context respectively. This range of contexts provides an opportunity to compare discourses across different international settings.
- Diversity of International Jurisdictions: As described above, each of these agreements falls under different jurisdictional authorities. The diversity of jurisdictional authority provides further opportunity to compare discourse across different international institutional arrangements.

Methodology

International environmental agreements are not typically conceptualised as discourses. A small group of studies such as those of Litfin (1994), Hajer (1997) and Dryzek (1997), however, have employed discourse analysis in their exploration of environmental policies. Litfin (1994), for example, uses discourse analysis to explore the negotiations over the control of ozone-damaging chemicals in an international environmental agreement: the *Montreal Protocol on Substances that Deplete the Ozone Layer*. Litfin defines discourse as a shared way of understanding the world that is exposed through oral and written speech. Discourse analysis understands policy-making as a problem-solving activity and focuses on a range of cognitive factors, including belief systems, ideologies, and consensual knowledge. Similarly, Ball (1990: 21), frames his analyses of national education policy in terms of "the way in which policy ensembles (collections of related policies) exercise power through a *production* of 'truth' and 'knowledge' as discourses." According to Ball, policies are 'regimes of truth' through which people govern themselves and others.

This article builds on this tradition of treating policies as discourses. It further adopts van Dijk's (1997a) position on discourse analysis, particularly his stance on critical discourse analysis. In critical discourse analysis, analysts are seen as actively involved in the topics and phenomena that they study. As Gusfield (1976: 32) states in his pioneering essay on the rhetoric of science, the rhetorical analysis of knowledge claims "enables human beings to transcend the conventional and create new approaches and policies". Thus, the focus of critical discourse analysis is upon the relation of language to power and privilege. The goal of the analysis is to make explicit the strategies and assumptions that operate to make a discourse appear to be common sense, apolitical statements (Riggins, 1997).

Hence, this article seeks not only to uncover dominant assumptions about scientific knowledge, the public and education operating within international environmental agreements, but in so doing, to challenge them. Unlike content analysis, critical discourse analysis places emphasis on the implied messages that underlie communication (Riggins, 1997). Discourse analysis in this context is focused upon hierarchies of interaction and social practice, and their functions in context, society and culture (van Dijk, 1997b).

Coding categories

The coding categories used in this analysis were based on three bodies of work: (1) John Dryzek's (1997) categories for analysing environmental discourses; (2) Paulo Freire's (1972, 1998) ideas on education and social movements; and, (3) Alan Irwin's (1999) ideas on knowledge transfer.

Findings

The international environmental agreements analysed for this study adhere to a discourse of administrative rationalism

International environmental agreements offer an excellent example of what Dryzek (1997) calls the discourse of administrative rationalism. Administrative rationalism seeks to organise scientific and technical expertise into a bureaucratic hierarchy in the service of the state. Administrative rationalism has a strong conception of the nature of government. Government is the administrative state. Governing is

about rational management in the service of a clearly defined public interest, informed by the available expertise. Administrative rationalism assumes two complementary kinds of hierarchy. The first subordinates the people to the state. The second puts experts and managers in their properly dominant places in the state hierarchy, which is justified on the basis of expertise.

The discourse of administrative rationalism takes the political-economic status quo of liberal capitalism as given. It recognises the existence of environmental problems, but assumes that existing political, economic and social institutions can solve them. The main obstacles to more effective protection are suggested to be dilemmas of collective action. It assumes there would be no fundamental obstructions to an environmentally sound organisation of society, if only every individual, firm or country would participate. Environmental problem solving thus becomes a management problem. Human interactions with the environment generate a range of problems to which human problem-solving devices need to be turned. According to the discourse, the best way to organise human problem solving and to co-ordinate public involvement is through a government-managed bureaucracy (Hajer, 1997; Dryzek, 1997).

ADMINISTRATIVE RATIONALISM ASSUMES A NATION-STATE SYSTEM OF GLOBAL GOVERNANCE

The discourse of international environmental agreements assumes a nation-state system of world governance. This is not surprising for, as Caldwell (1990) explains, the nation-state system dominates all aspects of global affairs. Nation-states, for example, have the power to determine which issues are global. The nation-state, possessing ultimate power and authority, remains the primary political unit in today's world. As Bennett (1991: 1) expresses it:

> The custodians of the means for protecting the interests of the world as a whole are still the more than 160 sovereign states, especially the rich and powerful states, which can wield the strongest pressures.

The negotiations for the *Convention on Biological Diversity* illustrate the re-framing of a global issue into nation-state terms. In the first session of the *Ad Hoc* Working Group of Experts, biodiversity was conceptualised as a global resource which transcends political boundaries: "biological diversity must be viewed as a common resource, like the atmosphere or the oceans, in which all nations have a common interest and towards which all have a common responsibility" (item 9, UNEP/Bio.Div. 1/2). By the Second session of the same working group, the global commons ideology had been re-framed into a nation-state model of governance: "The Executive Director stressed that any new international agreement should not infringe upon the sovereignty of nation states over their natural resources. It must protect the interests of the States in which the resources are located…" (item 2, UNEP/Bio.Div. 2/3).

Thus, even when environmental problems are acknowledged as transcending nation-state boundaries, individual nation-states continue to exercise tremendous authority over their management (Caldwell, 1990). Just as governments exert power and authority through management bureaucracies *within* nation-states, relationships *between* nation-states are similarly managed through international bureaucracies. As Haas (1990: 1) remarks, if historians in the twenty-third century were to interpret international relations in the latter half of the twentieth-century, they would note that even though the people who ruled these nation-states seemed to treasure their mutual independence as much as ever, "they also built an imposing network of organisations that had the task of managing problems that these states experienced in common…Proof lies in the number and kinds of such organisations, which increased at a stupendous rate after 1945".

The bureaucracies exist primarily in two ways. One is through the creation of international institutions. The other is through the creation of international organisations (Hurrell and Kingsbury, 1992). According to Young (1994: 3), institutions are "…sets of rules of the game or codes of conduct that serve to define social practices, assign roles to the participants in these practices, and guide the interactions among occupants of these roles". Organisations, on the other hand, are material entities, physical locations with personnel, equipment, budgets and typically, legal personalities. Following Young's terms, the Commission for Environmental Co-operation (CEC), UNESCO, and The Economic Commission for Europe (UN/ECE) are all examples of international organisations. The *Convention on Biological Diversity*, the *Århus Convention* and the *CEC Framework* fall within Young's definition of international institutions.

Politics is not explicitly recognised within the discourse of administrative rationalism (Dryzek, 1997). The neutral, third party tone of the agreements, for example "naturalises" or in other words, makes the discourse appear to be comprised of common-sense, apolitical statements (van Dijk, 1997). Yet, implicit assumptions of power, authority, agency and structure are none the less active.

Countries, for example, are not named: the generalised term "Parties to the Convention" implies that all

signatories to the Conventions are "the same" and thus, enjoy equal standing. Yet, as the minutes to the CBD negotiations reveal (UNEP/Bio.Div., 1988-1992) the very essence of the negotiation process is political. The primary responsibility of governmental representatives is to negotiate in the best interests of the country they represent. Representatives are not "free" to negotiate; they must adhere to the directives of their host governments. Consequently, the negotiations are not so much discussions aimed toward consensual agreement, as they are oral statements of official positions.

The negotiation minutes (UNEP/Bio.Div., 1988-1992) further demonstrate that power is not distributed equally amongst member states. Developed countries have more votes than industrialising countries. Indeed, the discrepancy in power between "North" and "South" countries is a major source of tension within international environmental negotiations (McConnell, 1997). Because the majority of biological richness exists within the South, the CBD negotiations are unique in affording Southern countries heightened advantage over the North (McGraw, 1998). Yet even in the case of the CBD, regional tensions still exists as McConnell (1997: 45) describes:

Thereafter, however, delegates assumed their usual patterns of alliance or confrontation: G77 versus "the West" or "the North" on finance and technology; Malaysia suspicious of "huddles" that did not include Malaysia; US versus EC (and practically everyone else) on biotechnology regulation.

IMPLICATIONS OF THE NATION-STATE SYSTEM ON PUBLIC PARTICIPATION

Administrative rationalism assumes a nation-state system of governance in which the public is conceptualised in terms of nation-state citizenry. In *the Århus Convention*, for example, the definition of the public is framed within a nation-state model. Hence, according to *the Århus Convention*: "(t)he public means one or more natural or legal persons, and, in accordance with national legislation or practice, their associations, organisations or groups (lines 156-157)". Similarly, within *the CEC Framework* the definition of the public is restricted to the geographic range encompassed by Canada, Mexico and the United States. Thus, in *the CEC Framework:* "The term 'public' is defined inclusively and is meant to accommodate all persons, organisations or groups of people in North America" (line 112-4).

Wide spread use of synonyms such as "citizens" and "legal person" provide further evidence that "the public" is conceptualised within a nation-state model. In the Århus Convention, for example, a number of undefined terms including: "citizens", "individual citizens", "legal person", "public interest", and, "natural person" are used synonymously with "the public". Similarly, in the Global Initiative, the terms "society" and "public" are conjoined as "public society" in one section of the text and then used interchangeably as "society" and the "public" in another.

Conceptualising the public in nation-state terms raises important issues in terms of public participation. In the case of *the CEC Framework*, not everyone in the "public" is allowed to participate in the same way. As the following excerpt illustrates, the "public" is categorised with respect to eligibility for participation in CEC activities; it is the CEC, not the public themselves that determines who gets to participate and in what manner:

a) Open Public Meetings: These meetings would be open to participation by all without restriction, subject to space availability and the security of participants.

b) Public as Observers: These are meetings that are fully or partially open to the public as observers, subject to space availability and the security of participants.

c) Public Participation by invitation: In specific circumstances, the appropriate CEC component may decide that a meeting or portion thereof, should be focused to specific groups or persons. The appropriate CEC component may decide that a meeting should be closed to the public. Documents to be discussed at an open public meeting should be made available to all interested stakeholders in advance, for a period of not less than 30 (thirty days) during which comments from the public may be received. (lines 190-202)

Similarly, the *Århus Convention* differentiates "the public" into a sub-category called "the public concerned". According to the text of the agreement:

> The public concerned means the public affected or likely to be affected by, or having an interest in, the environmental decision-making; for the purposes of this definition, non-governmental organisations promoting environmental protection and meeting any requirements under national law shall be deemed to have an interest. (lines 159-163)

The definition of "the public concerned" in lines 159-163 above specifically recognises environmental non-governmental organisations (ENGOs) as having an interest in environmental decision-making. The rationale for recognising ENGOs and not say, multinational companies who, based on their lobbying activities in the International Climate Change negotia-

tions for example, one could argue are just as interested in environmental decision-making, is not given.

The power of governments to control public access is subtly expressed in the discourse. In the case of the *CEC Framework,* for example, the section of the text entitled "transparency and accessibility" (lines 166-88) is predicated on the assertion that "the CEC endeavour(s) to conduct its activities in an open and transparent fashion". Though much of the section is devoted to mechanisms for making information accessible, such as providing documents in English, French and Spanish, and posting documents on the official CEC web site, there are subtle qualifying statements that indicate restrictions to accessibility. I have marked such qualifying statements with Italics as follows: "The public should be provided with all relevant CEC documents *as appropriate". "When appropriate* the project descriptions or details of programmes should address opportunities for public participation in each project". "The public notice of the meeting should provide information on *how* the public can participate, and on *any restriction that might apply".*

These examples support the interpretation that it is the signatory governments not the public who determine the processes through which public access to information, or involvement in environmental decision-making can occur. The public has "rights for access to information" but these rights are applied within the discretion of the Parties to these agreements.

Finally, the status of "participant" in the discourse falls within traditional nation-state jurisdictional boundaries. States are full participants; non-governmental organisations are observers. Parties to the *Århus Convention* have the right to vote on decisions, whereas non-governmental organisations do not:

> Any non-governmental organisation, qualified in the fields to which this Convention relates, which has informed the Executive Secretary of the Economic Commission for Europe of its wish to be represented at a meeting of the Parties shall be entitled to participate as an observer unless at least one third of the Parties present in the meeting raise objections. (lines 571-6)

Similarly, in *the Global Initiative,* inter-governmental organisations, such as UNESCO and institutions, such as the CBD are specifically recognised as responsible for the development, launching and implementation of the Global Initiative. Non-governmental organisations are not specifically recognised.

The hierarchical relationship between governments and the public is further evidenced in the funding selection process for public participation. In the *CEC Framework,* for example, it is the CEC that determines who should receive funding to participate in public participation processes as follows:

Selection of eligible candidates for financial support will be guided by the following:

a) Ensuring a wide range of views and interest—public participants should be selected from different sectors representing a broad range of views in each country.

b) Demonstrated expertise with the topic(s) to be dealt with at the public meeting

c) Ability to present specific, concrete and constructive proposals. Funding for participants shall be in accordance with the CEC Business Travel Directive.

(lines 237-242)

Thus, members of the public are selected for financial support to participate in public participation forums based on their ability to meet CEC criteria. These criteria include: "demonstrated expertise", and "specific", "concrete" and "constructive" proposals.

The contentious aspects of public participation are not acknowledged in the discourse. Would proposals that challenge the CEC dominance of the public participation process be deemed "non-constructive" and, therefore, ineligible for funding support? Would a lay person with a passion for migratory birds but no "demonstrated expertise" be eligible for funding? The placement of the CEC as both the funding agency and the arbitrator of the public participation process is a further example of the power of governments in the hierarchy of the discourse.

It should be noted that the *Århus Convention* differs from the other two agreements in that it frames its commitment to public participation not only in terms of governments but also in terms of "rights". For example, in lines 49-51 the *Århus Convention* justifies itself based on human rights: "Recognising that adequate protection of the environment is essential to human well being and the enjoyment of basic human rights, including the right to life itself". (lines 49-51)

In addition, in lines 116-22 the *Århus Convention* justifies itself in terms of intergenerational rights:

> In order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being, each Party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters in accordance with the provisions of this Convention. (lines 116-22)

The overall rationale for the *Århus Convention* is also expressed in terms of a widely accepted value, that of democracy. It claims that the "implementation of this Convention will contribute to strengthening democracy in the region of the United Nations Economic Commission for Europe" (UN/ECE, lines 98-100).

These excerpts provide an image of a world order in which public spirited Parties agree to participate in a manner that benefits the rights of both present and future generations. Yet as the discussion illustrates, the power of these same governments to determine who has access to information, what information they have access to, and when and who may participate in decision-making, stands in sharp contrast to the benevolent image these claims inspire. The juxtaposition between *equity*, in the form of claims to widely accepted values such as fairness and transparency, and *power*, in the form of governments dictating participation is evident in Article 7:

> PUBLIC PARTICIPATION CONCERNING PLANS, PROGRAMMES AND POLICIES RELATING TO THE ENVIRONMENT
>
> Each Party shall make appropriate practical and/or other provisions for the public to participate during the preparation of plans and programmes relating to the environment, within a transparent and fair framework, having provided the necessary information to the public. Within this framework, article 6, paragraphs 3, 4 and 8, shall be applied. The public which may participate shall be identified by the relevant public authority, taking into account the objectives of this Convention. To the extent appropriate, each Party shall endeavour to provide opportunities for public participation in the preparation of policies relating to the environment. (lines 444-455)

As this excerpt demonstrates, the public is entitled to participate in a "transparent and fair" framework, yet "the public which may participate shall be identified by the relevant public authority". Public participation is not guaranteed, but rather determined "to the extent appropriate" by each Party.

Indeed, governments not only determine how, but if, the public should be included. The first question on the *CEC Framework's* "checklist for designing a public participation process" reads "Do you need to involve the public?" (Line 234).

Thus, the discourse assumes a hierarchical relationship in which citizens are expected to follow directives of state governments. It presumes that public involvement in environmental problem solving occurs within national borders. Such a presumption fails to reflect the "flow" of environmental issues across national boundaries and the inability of individual nation-states to control them. It also misrepresents the ways in which individuals and groups realign themselves in response to environmental issues, for instance, by establishing new group identities that cross international borders in response to perceived opportunities or threats. Thus, it fails to acknowledge the significant influence and contributions of global civil society.

Moreover, because it only recognises the public in terms of national citizenry, it makes no provisions for determining how members of the public who are not citizens of the country in which a dispute is raised can be heard. Determining such representation runs the risk of becoming an arbitrary, personal decision on the part of an individual manager. The result is that public involvement is constrained by selection processes that are not representative, and that are, therefore, anti-democratic.

ADMINISTRATIVE RATIONALISM MANIFESTS ITSELF IN MANAGEMENT BUREAUCRACIES

Administrative rationalism is a twentieth century response to the increasing complexity of societal decision-making. It is based on the ideology of Max Weber, the German sociologist, who claimed that bureaucracy was the supremely rational form of social organisation (Gerth and Mills, 1958). Within this Weberian bureaucratic ideal, Dryzek (1997: 76-77) explains:

> The best way to tackle a complex problem is to break it down into smaller sets and then into still smaller subsets. Each subset should then be assigned to an individual or small group to craft solutions. These partial solutions are then aggregated into a solution for the complex problem as a whole. Clearly somebody needs to formulate the initial breakdown into sets and subsets…and somebody needs to piece together the elements in the aggregation process. That "somebody" is the apex of organisational hierarchy.

The discourse of international environmental agreements operates within a bureaucratic framework managed by governments. In the CBD, for instance, a hierarchy of official work plans and expert committees restricts the participation of educationalists. Only the Subsidiary Body for the provision of Scientific, Technical and Technological Advice (SBSTTA), for example, has a direct reporting relationship to the Conference of the Parties to the CBD. Similarly, in the Commission for Environmental Co-operation (CEC), only individuals appointed by governments are eligible to sit on the Joint Public Advisory Committee (JPAC). Like SBSTTA, members of JPAC are positioned in an advisory capacity to governments. They pass information and advice *up* the hierarchy to governmental bodies responsible for decision-making. They do not participate directly in governmental decision-making forums.

Again, it is not surprising that international environmental agreements adhere to the discourse of administrative rationalism. Governments traditionally handle complex problems through administrative bureaucracies. Thus, when environmental problems came to prominence in the 1960s, they were "readily associated with a public policy tradition which accorded substantial status to scientific expertise as harnessed by the administrative state" (Dryzek, 1997: 63). Administrative rationalism provided a nexus of science, professional administration and bureaucratic structure that was already in use in many other policy settings. The hierarchical structure of government environmental ministries and agencies the world over demonstrates the widespread application of this theoretical model.

Further evidence of the power and authority assumed by governments in the discourse of international environmental agreements is found in the structure of the *Convention for Biological Diversity* negotiations. According to the minutes of the negotiation meetings (UNEP/Bio.Div., 1988-1992), only official representatives of member states participate in the negotiation process. The interests of non-state actors, such as non-governmental organisations or private industry, can only be voiced through the filter of these governmental representatives.

IMPLICATIONS OF MANAGEMENT BUREAUCRACIES FOR PUBLIC PARTICIPATION

Bureaucracies, according to Billig (1996), attempt to process the messiness of the world into orderly categories. The bureaucrat cannot treat each individual case as if it were unique; thus, each case must be placed into bureaucratically suitable pigeonholes. This process of categorisation, while bringing order, restricts participation to pre-set formats and forums. It robs individuals of the ability to respond flexibly to the unique and particular circumstances of a situation. International environmental agreements rely on bureaucratic management systems to delineate the types of information to which the public can have access and the types of forums in which the public can participate. Such a selective categorisation process constrains public access and renders requests that fail to fit within the categorisation system irrelevant (Billig, 1996).

Only public participation processes that are managed within government bureaucracies, for example, are recognised in this discourse. Participation instigated by the public is not acknowledged. However, as the December 1999 public protests at the World Trade Organisation (WTO) meetings in Seattle illustrate, public-generated environmental actions do occur. The WTO protests were effective in drawing widespread media attention to the environmental and social concerns of global trade and they contributed to the suspension of global trade negotiations. From the perspective of the public involved in these demonstrations, the results were successful. Yet this form of public participation in environmental decision-making was characterised as problematic by the governments involved in the meetings. According to an article posted on the International Centre for Trade and Sustainable Development web site www.ictsd.org/wto_daily/final.htm (December, 1999):

> This outcome evidences the painful change which the multilateral trading system is undergoing as its Members—whose activities are now intensely scrutinised by civil society and legislators—shift the direction of the WTO towards public interest.

The response of the international community to such "unmanaged" public participation has been a flurry of policy making designed to regain management and control over public participation. In the latter part of 2000, for example, the World Trade Organisation (WTO), the Organisation for Economic Co-operation and Development (OECD) and the US Environmental Protection Agency (EPA) were all actively engaged in drafting public participation policies. As the individual involved in drafting the *CEC Framework* put it: "After Seattle, public participation is in". (Interview A, line 110)

The new public participation policies of the WTO, the OECD and the US EPA further suggest the dominance of the discourse of administrative rationalism and its assumptions of government-driven administrative procedures. Note, for example, the terms that I have marked with Italics in the following description of the US Environmental Protection Agency's (EPA) new Draft 2000 Public Involvement Policy:

> The new Policy parallels the old one, except that it addresses many changes that have occurred since 1981. These include:…EPA's emphasis on achieving *compliance* through partnerships, technical assistance, and public access to information; *increased capacity of states, tribes and local governments* to carry out delegated programs; and *new government-wide administrative procedures* and public involvement requirements.

Thus, it appears that when the public do express themselves as active agents, governments attempt to re-assert their hierarchical authority by creating public participation policies that adhere to the bureaucratic management systems that characterise the discourse of administrative rationalism. Efforts to restrict public participation to government-managed systems casts doubt on the public-spirited motives espoused

in the administrative rationalism discourse. Though unstated, the goal is not simply public participation, but rather participation in a manner that returns power to government and insures public compliance to government-determined procedures.

Bureaucratisation that actually restricts public participation in the name of enhanced participation is antithetical. Similarly, the notion of democracy present in this discourse is one in which all information and authority flows from the top to the bottom. According to Chomsky (1997: 71), this is the inverse of "democratic" control; it follows the structural conditions of dictatorial power:

> What in political circles would be called legislative, executive, and judicial powers is gathered in controlling hands which, so far as policy formulation and execution are concerned, are found at the peak of the pyramid and are manipulated without significant check from its base.

The discourse of administrative rationalism also fails to meet the criteria that Dryzek (1996) uses to identify democratisation. These criteria are 'franchise', 'scope' and 'authenticity'. Franchise, according to Dryzek, refers to the number of participants in any political setting. By restricting who is included in public participation processes, and dictating how these processes will function, the discourse of administrative rationalism *decreases* franchise. Scope concerns the domains of life under democratic control. Whereas the creation of policies that serve to increase public access to environmental information and decision-making would appear to be *increasing* scope, the gatekeeper role of the government in these policies serves to *decrease* scope. Authenticity is the degree to which democratic control is substantive rather than symbolic, informed rather than ignorant, and competently engaged. Here again, policies that promise "transparency and accessibility" as in the case of the *CEC Framework,* give the appearance of an open, inclusive practice, yet by enshrining the right of governments to withhold information, democratic control appears to be more symbolic than substantive.

A BRIEF WORD ABOUT ADMINISTRATIVE RATIONALISM AND SCIENTIFIC KNOWLEDGE

Although it is beyond the scope of this article, it should also be noted that the discourse of administrative rationalism adheres to what Macnaghten and Urry (1997) describe as a 'Science First' model of environmental decision-making.[79] In the Science First model, the public is expected to respond to environmental problems, which have been initially and accurately described by natural scientists. Within this rationalist paradigm, environmental issues are real, physical problems, arising from specific human interventions in natural systems; their character and boundaries are given to us from nature, their authenticity guaranteed by natural scientific investigation and confirmation (Haas, Williams and Babai, 1977; Grove-White, 1993). Solutions, according to this model, are informed by science, negotiated and adopted by politicians and enacted by the public through various means of persuasion and regulation. As science is the privileged source of environmental information in the discourse, the public is conceptualised as ignorant because they do not have scientific expertise.

A chief implication of this finding, is that non-scientific forms of knowledge held by the public, such as local or lay knowledge, are not valued in this discourse. Furthermore, by reducing the role of the public to that of information recipient, public input into environmental problem resolution is marginalised and public agency is undermined. This situation leads to what Farrell and Goodnight (1998: 97) conceptualise as "the accidental public": an audience extrinsic to the real work of environmental problem solving. By implication, the conceptualisation of the public as ignorant undermines the espoused goal of public involvement and robs environmental decision-making processes of information that resides in the realm of the public. Furthermore, the assumption of a single, ignorant public grossly misrepresents the diversity of knowledge, experience, perspective and expertise that exists within a world population of more than 4 billion people.

Conclusions and recommendations

The three international environmental agreements analysed for this study represent a diversity of international jurisdictions and contexts. Yet, despite this diversity, a discourse of administrative rationalism was reproduced in each. There is no explanation in the texts of the agreements, or in the official guides to the agreements, as to why this philosophical perspective was chosen as an operating principle. Thus, adherence to a discourse of administrative rationalism does not appear to be a conscious choice but rather an assumed norm.

Discourses tend to be unrecognised by those working within them (Sewell, 1992). Thus, it is unlikely that such an embedded discourse will be identified, let alone challenged by those regularly working within

[79] For further discussion, please see: Kelsey, E. (2001). Reconfiguring public involvement: Conceptions of "education" and "the public" in international environmental agreements. Doctoral Thesis, King's College London, London, England.

the international environmental policy cycle. Furthermore, because it is comprised of nested assumptions, changes to one aspect of the discourse are unlikely to change the discourse as a whole. For instance, both the *Århus Convention* and the *CEC Framework* are innovative and progressive in terms of their emphasis on increasing public participation in environmental decision-making. Yet, through their adherence to the discourse of administrative rationalism, these agreements perpetuate assumptions of governmental power and authority and public ignorance that cause public involvement to be constrained and undermined by the structural context in which they operate.

The embedded nature of the discourse and the mutually reinforcing character of the assumptions nested within it imply that the discourse is resilient to change. Therefore, the findings described in this article support the conclusion that solutions to the problem of public involvement demand a de-coupling of the discourse of international environmental agreements from the discourse of administrative rationalism.

This article concludes that attempts to improve public involvement in environmental problem resolution through education will remain problematic and unsuccessful as long as the processes operate within the discourse of administrative rationalism. Consequently, this study concludes that more effective public involvement in environmental problem resolution depends upon exposing and challenging the assumptions of the discourse of administrative rationalism as a whole. It calls for reflexivity in the sense that Hajer (1997: 280) describes as "a quality of discursive practices that illuminates the effect of certain social and cognitive systems of classification and categorisation on our perception of reality". The research described in this study represents a beginning attempt at such a reflexive process by unmasking assumptions that underlie the discourse currently operating within international environmental agreements, and by encouraging further debate of these assumptions. Furthermore, the research described in this study points to criteria that a more appropriate discourse for international environmental agreements should consider. These include:

- Recognition of global civil society and a reconceptualisation of the public beyond the confines of nation-states.
- Rejection of the notion of an ignorant, homogenous public in favour of more diverse conceptions of multiple publics.
- Recognition of the value of multiple forms of knowledge (e.g., lay, traditional, local, scientific, etc.).
- Re-framing environmental governance in terms of global "flows" rather than restricting solutions to the existing mechanisms and institutions of the nation-state system.
- Development of reflexive institutions that are flexible and self-aware, that face up to the practical shortcomings of universalising discourses and that support reflexive forms of policy making that stimulate debate on norms and values.

In short, these criteria begin to define a discourse that reflects a reflexive approach to deliberative democracy: A discourse that recognises the social construction of environmental and scientific knowledge claims and the importance of alternative forms of knowledge. While the discussion of various democratic models is beyond the scope of this study, calls for societal learning and debate necessarily raise issues of democratic participation. Rather than advocating a single model of democracy, the findings of this study draw attention to the importance of a democracy that is deliberative. It argues that a deliberative ideology is necessary to address the complexity and contested nature of knowledges, environmental issues and their interactions with social, economic and political systems.

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The Strength of Weak Ties: The Influence of Horizontal Research Ties on National Environmental Policies

by Elizabeth L. Malone and Sylvia A. Edgerton***

Granovetter (1995) has proposed social network analysis as a way of linking micro and macro levels of social analysis. Social network analysis examines linkages among individuals, including friendship ties, dependences (e.g., bosses and employees), advice, academic disciplinary elites (Caplow and McGee 1958, Burt 1978) and information flows. Often such ties are categorised as "strong" or "weak"—friendships versus acquaintances, for example. Elaborate structures of networks have been mathematically represented and analysed to explore the nature of cliques, interlocking directorates and similar behaviour of corporations (Mintz and Schwartz 1985, Mizruchi 1992), information networks, and family-power alliances (e.g., the Medicis). Social network studies have also explored the co-occurrence of ties, for example, "is friends with" and "gets advice from" (Krackhardt 1987).

What can social network analysis tell us? By mapping the formal and informal, strong and weak ties among actors, researchers can account for individual and organisational behaviour, the pathways and speed of change, and how new ideas can be spread or blocked. All of these elements are of interest to the study of how policy comes into being. In this article we discuss empirical studies whose conclusions can be triangulated to suggest promising hypotheses about the structure and function of ties among scientists and policymakers and about the role of agency in such networks. We hypothesise that the relatively "weak" and "informal" ties within the scientific community and among scientists and policymakers can actually better facilitate scientifically informed policy development than can the model of policy networks with stronger "advice" ties to scientists.

Basic social network concepts

Emirbayer (1994:1448) defines a network as "the set of social relations or social ties among a set of actors (and the actors themselves thus linked)." Social network analysts assume that it is insufficient (or irrelevant) to simply categorise people by common attributes or values (political liberals, for example, or feminists). Instead, the important feature that explains human behaviour or social processes is the pattern of relations among people. The network approach does not merely describe these but "investigates the *constraining* and *enabling* dimensions of patterned relationships among social actors within the system" (Emirbayer 1994:1418).

Networks can be classified on several important dimensions. Features of interpersonal networks include range (the extent to which the network connects the actor to a diverse set of other actors), composition (the types of people in a network), centrality (the tendency for an actor to be involved in many ties), density (how many ties exist out of the number of potential ties), cohesion (a measure of the shortest paths between pairs of actors), network diameter (the longest distance between two actors), and social distance (the number of nodes between two actors) (Marsden 1987, Wasserman and Faust 1994).

The empirical studies: The strength of weak ties

Social network analysis often focuses on ties between members of a relatively small network: a person and his or her circle of friends, Krackhardt's (1987) 21 managers, 16 Florentine families (Padgett 1987), and so on. Granovetter (1978) points out that this focus leads to analysis of strong ties *within* a group, ties that are some function of the amount of time, the emotional intensity, mutual confiding, and reciprocity. It almost inevitably excludes an examination of weak ties, which tend to occur *between* groups. Weak ties may include one or more of the elements of strong ties, but at lower levels. Focusing on strong ties makes it easier to bound a study, and the number of weak ties could quickly become unmanageable for a researcher who wants to tell a clear story and to present that story visually.

However, if we want to address questions about how information and innovation spread, we must include—even focus on—weak ties, because information spreads poorly via paths that consist only of strong ties. If everyone who passed on a message did so only to close friends, transmission of the message would be slow at best and, very possibly, short-lived.

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Many will hear the message multiple times, and it may be limited to small cliques of people. If weak ties are included, "intuitively speaking, this means that whatever is to be diffused can reach a larger number of people, and traverse greater social distance (i.e., path length), when passed through weak ties rather than strong" (Granovetter 1978:1366).

Probably the best-known example of the strong diffusion potential of weak ties is the "small world" investigations of Milgram and associates (Milgram 1967, Travers and Milgram 1969, Korte and Milgram 19760), bolstered recently by the phrase "six degrees of separation" applied to the ties among films by appearances of Kevin Bacon. In the small-world studies, a randomly selected person receives a booklet, with instructions to forward it to someone the person knows who would be likely to be able to get it to a target person (again, via a string of interpersonal paths). For completed chains (12-33% of the total attempts in different studies), the number of links ranged from two to ten, averaging between five and eight. Newman (2001) analysed scientific collaboration networks and discovered that only 5-6 links (a link defined as coauthoring a paper) are necessary to bridge the distance between two randomly chosen scientists in large communities, such as the biomedical community.

Granovetter (1995) applied the concept of the strength of weak ties in his study of how people find new jobs. The job market is characterised by poor information about both jobs and people that are available. In fact, "those who are most insulated from effects in their past life, who have fewest contacts over a long term in the occupational community, who approach the marketplace at each new job with a clean slate—as in the 'perfect market' of economic theory—are the most disadvantaged, have the fewest choices, and achieve the least desirable positions" (Granovetter 1995:95). Granovetter found that male professional and technical workers who began new jobs in 1972 found them through formal means (18.8%), direct application (18.8%) and personal contacts (55.7%). The "weak tie" personal contacts far outnumbered the "strong tie" contacts.

Mintz and Schwartz (1985), in their study of interlocking directorates, study the phenomena of between-group ties. A person who serves on the boards of two or more corporations fits Granovetter's definition of a weak tie, rather than the more intensive and time-consuming strong tie. And, like Granovetter, they point to "the enormous potential for information exchange" in ties between two corporations formed by a common board member. "The same interlock can be both co-optational and interlock can be both co-optational and persuasive: the host firm attempts to co-opt the sending company into a positive stance toward itself, while the sending firm hopes its representative will influence the host in the other direction" (Mintz and Schwartz 1985:133). A bridging person, in short, can gain a broader view of the industry and help to reconcile differences among firms for the good of the industry.

The common person as a link between groups draws on Simmel's (1955[1908]) ideas of intersecting circles of memberships. The way in which groups build social and political influence is by using members as bridges to other groups. This process breaks down traditional political cleavages and allows new alliances and policies to emerge. Diani (2000) gives the example of environmental organisations partnering with hunting organisations to protect habitats.

Rosenthal et al. (1985) investigated the organisational affiliations of 202 prominent women reformers between 1840 and 1914. They developed three unique configurations of social movement clusters during three distinct periods within the study years. These configurations demonstrated the importance of network ties in reform work. Similarly, McAdam (1986) studied the participation or nonparticipation of similarly committed students in the 1964 Freedom Summer project in Mississippi. He concludes that participants who risked violence belonged to a larger number of organisations, especially political ones, and had more ties to other participants.

Krackhardt and Stern (1988) argue that internal (i.e., strong) ties in organisational subunits retard trust and information-sharing among groups, and weaken the capacity of the groups to work together to solve crises. In contrast, if people have ties external to their subunits (i.e., weak ties), co-operation among subunits will be enhanced when crises arise, increasing the likelihood that the organisation will respond effectively.

The role of weak ties in international policymaking

The inference of Granovetter's work is that weak ties are more likely to link members of different groups than are strong ties and that weak ties provide more and faster pathways for new ideas to spread among groups. Therefore, looking at the existence and nature of weak ties is likely to provide insight about how new ideas enter groups and how groups expand the resources available to them. "[W]eak ties, often denounced as generative of alienation, are here seen as indispensable to individuals' opportunities and to

their integration into communities" (Granovetter 1978:1378).

In international relations, the diplomatic and other established political and economic channels are interpersonal strong ties: they are a function of painstaking and time-consuming protocols, intense with meaning. A wrongly termed or wrongly timed phrase, an invitation omitted, or expectation unmet can mean engender conflict, just as they can in an interpersonal relationship. Similarly, the vertical ties from boss to subordinate in a national policy hierarchy are also interpersonal strong ties. There is much at stake in political policy development and in positions whose occupants come and go at the will of the current administration. By contrast, non-political channels, such as those opened within international scientific organisations, are relatively weak ties between countries, depending only upon the acquaintanceship of scientists from their respective countries. Not much is at stake in a political sense in such relationships, but international, scientific network ties provide many opportunities for information-sharing and innovation pathways.

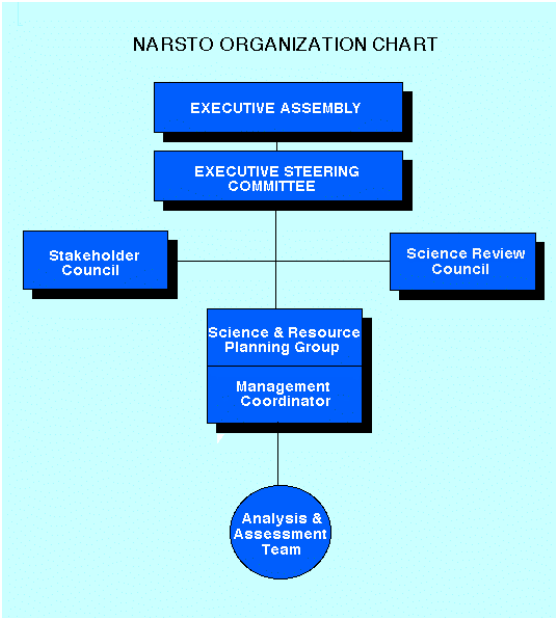
Therefore, the social network theory suggests that using the weak ties of scientific networks will be more effective in influencing policy than will the strong ties of national policymakers to each other. Looking at the activities of NARSTO is a good, albeit informal, test of this hypothesis.

NARSTO and scientific-policy ties

NARSTO, formerly the North American Research Strategy for Tropospheric Ozone, is a public/private partnership established in 1994, whose membership spans government, industry, and academia throughout the United States, Canada, and Mexico. Its primary mission is to co-ordinate and enhance policy-relevant scientific research and assessment of air quality issues that are of common concern to its member institutions. NARSTO is charged with establishing and maintaining effective communication channels between the scientists who conduct air quality-related research and the decision-makers responsible for developing air quality policy; such ties fit the definition of weak ties. One of the first efforts undertaken by the organisation was a science assessment of tropospheric ozone (NARSTO 2000, Schere et al. 2000). Currently, NARSTO is undertaking a scientific assessment of fine particulate air pollution.

Members of NARSTO include organisations that focus on policy and air-quality management, health and ecological effects research, emission control-technology research, and related international policy and research communities. Participation on the NARSTO Executive Assembly (EA) and Executive Steering Committee (ESE) is limited to those member organisations that provide resources to sponsor NARSTO research and development (see Figure 1). The Executive Steering Committee selects Co-chairs from its ranks, representing the public and private sectors of NARSTO membership. NARSTO Co-chairs have been elected from a number of member organisations, including Environment Canada, the US Department of Energy, Instituto Mexico del Petroleo, Instituto Nacional de Ecologia, General Motors and the American Petroleum Institute.

Figure 1: NARSTO Organisation Chart



The ESE and the EA approve the initiation of a science assessment. The NARSTO Co-Chairs are generally directors of science research and/or science policy in their organisations who report directly to key policy officials and therefore have a formal relationship with them and with each other; in the terms of this study, they have strong ties to each other. Key scientists, who then are selected to become assessment chairs and manage the assessment activities, tend to be subordinates who also are related to the Co-Chairs and each other through formal, "strong" ties.

The science assessments themselves are organised and conducted by a subset of academic and non-academic scientists selected by the key scientists and assessment chairs. These scientists have no formal ties with each other and tend to work together in an ad- hoc manner to accomplish the goals and objectives of the assessment. It is through these informal

relationships that new collaborations are often formed that cross scientific disciplines, national boundaries, and the public/private sector barriers.

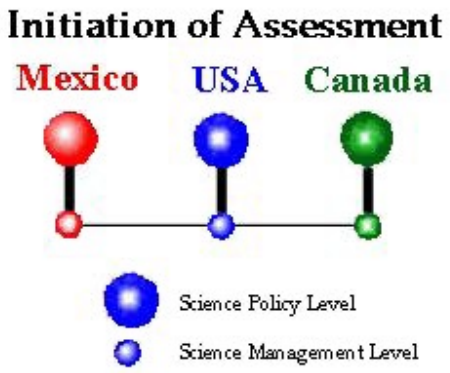


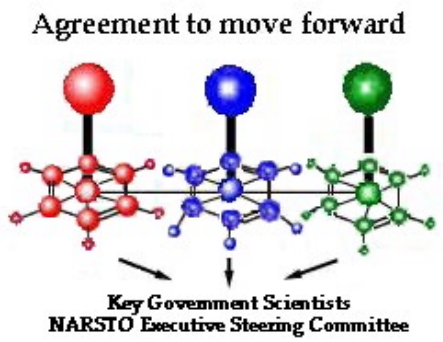
Figure 2: Initial Network Ties

These informal ties are a far more effective way to transmit scientific information and concepts and build relationships that lead to greater understanding than the formal ties created through the institutional arrangements (e.g. government bilaterals). The relationships built through this process often continue after the assessment is complete as evidenced by continued collaborations of the scientists across organisations and disciplines.

As an example of the process, the currently ongoing NARSTO assessment on fine particulate matter in the atmosphere was initiated at the request of the NARSTO executive steering committee. A key individual, Dr. Daniel Albritton of the US National Oceanic and Atmospheric Administration, provided the vision to move forward. Dr. Albritton served successfully as a central figure in this activity due to his strong ties both with the policy community in the United States, and through his role as Chair of a governmental interagency subcommittee on air quality research. Dr. Albritton's professional and personal relationship with the then Director for the Environment and Natural Resources at the White House Office of Science and Technology Policy enabled him in earlier years (the early 1990s) to bring high priority attention within the government to NARSTO activities. This strong encouragement from the highest levels of the US government then enabled other federal agencies to begin devoting resources to NARSTO activities. Outreach through formal channels to key individuals at Environment Canada, the National Institute of Ecology and the Mexican Petroleum Research Institute brought an agreement from Canada and Mexico to participate in the organisation.

What we see in Figures 2-5 is the progression of a NARSTO assessment. The proposal for an assessment is made through the strong ties of the formal structure of NARSTO and the member country organisations (Figure 2). These processes are fixed and not likely to be bridges across which information can spread widely. When there is agreement to move forward with the assessment, assessment chairs are appointed who also have strong ties to policymakers (Figure 3). In the case of the PM Assessment, three chairs were selected. Two of these chairs represent member governments, Marjorie Shepherd of Environment Canada and Jim Vickery of the US EPA, and a third chair, Peter McMurry of the University of Minnesota, represents the scientific community. The assessment chairs are expected to reach out to the wider community of government, university, and private sector scientists to develop a proposal for the assessment and obtain approval from the NARSTO executive steering committee and executive assembly to move forward. The committee and assembly se bodies select individual scientists to lead specific chapters of the assessment and suggest contributing authors.

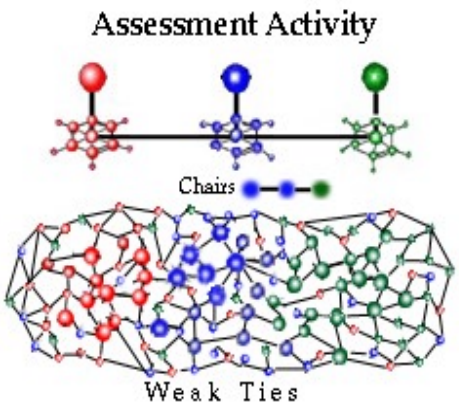
Figure 3: Extending the Network



Scientific teams thus form based around the chapter leads selected. In general these teams are diverse groups of scientists who may or may not have been familiar with each other's work and who are meeting for the first time. As the scientific teams developed, the relatively weak ties of scientists began to dominate the network landscape (Figure 4), creating numerous pathways for disseminating information—to each other and to relevant policymakers in all member countries. This is a particularly effective way of disseminating information to countries that may have fewer resources to provide for scientific travel and participation at the international level. In the case of NARSTO, many Mexican scientists were able to develop or strengthen international collaborations

with scientists in the United States and Canada. The first international NARSTO symposium (Edgerton et al. 2001), "Tropospheric Aerosols: Science and Policy in an International Community," was held in October 2000 in Querétaro, Mexico, which enabled the participation of relatively large numbers of Mexican scientists who may not have had funds for international travel. In addition, more than 50 young scientists participated in professional training classes that were offered at the symposium and taught by highly qualified scientific leaders. Finally, cross-disciplinary ties were formed through the presence of public health scientists (especially from Mexico) and organisational researchers (from Canada).

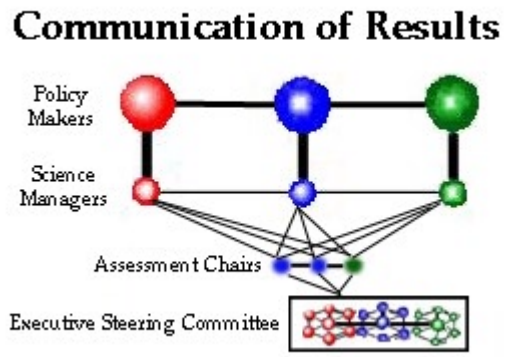
Figure 4. Scientific Networks of Weak Ties for Horizontal Bridges



Key individuals may also be very influential in facilitating the transfer of information through these weak ties. Dr. Mario Molina, originally from Mexico and currently a professor at the Massachusetts Institute of Technology, is a 1995 Nobel Prize winner for Chemistry and very highly respected in Mexico. Dr. Molina has supported and endorsed the NARSTO assessment activities and brought high-level attention to them in Mexico. This degree of attention has likely played a major role in encouraging a wider participation from Mexican scientists than might otherwise have occurred.

While there is a formal process for publishing the results of the assessment (Figure 5), the information flow now includes ministers who know individual scientists, scientists who use their assessment work in other endeavours, and so on. By the time of publication of results, much or all of the valuable information spread has been accomplished. In additional, the weak ties of the scientific network developed through the assessment process are likely to remain in place. These ties therefore enable continual flows of information and lead to new collaborations among scientists, keeping a core part of the network active for some time into the future.

Figure 5: New Weak Ties Are Pathways for New Information



NARSTO weak ties and the spread of policy-relevant information

NARSTO is a good example of how forming and utilising relatively weak ties among scientists and scientific organisations can promote not only the creation of new knowledge but its spread internationally to policymakers. The flow of information that results from strong vertical ties between a policymaker and a scientific advisor is generally limited by the nature of the relationship to only that information specific to official duties and responsibilities. Information of a broader scientific nature is not generally shared via this pathway. The formal structures of an organisation and of a country's ministries have fixed processes and protocols that make them unlikely conduits of new knowledge. The process of conducting a scientific assessment, however, allows the formation of new, relatively weak, horizontal ties that can act as bridges to spread new information throughout the science-policy network.

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Part II

Globalising Environmental Policies Through Nation States: Horizontal Diffusion of Policies and Technologies

No Withering Away of the Nation State: Ten Theses on Environmental Policy

by Martin Jänicke[*]

There have been fears that the nation state and its ability to set demanding standards in fields like environmental policy has diminished in the context of globalisation. There is, on the other hand, the hopeful prognosis of neo-classical economists that the same globalisation would be connected with deregulation and fundamental reduction of the role of government. Neither the fear nor the hope of a withering away of the nation state in times of globalisation have been supported by empirical research. But the subject is still highly relevant, since we have learned in the debate so much about the role of the nation state in the context of globalisation. I would like to present ten theses regarding the role of the nation state in global environmental policy. My basis are mainly cross-national studies, partly made by the Environmental Policy Research Unit of the Free University of Berlin.

The open ("globalised") national economy needs and is characterised by strong government, both in size and scope

This is contrary to the thinking of many neo-classic economists. There have been cross-national studies showing that public expenditures in open economies in the OECD tend to be relatively higher (see: Cameron 1978, Garret 1998, Bernauer 2000). But it seems plausible to assume both, a larger size and a larger scope of government activities in countries being highly integrated into the international economy. Open economies need

- a well developed infrastructure for successful international competition, that means more money and more public activities in fields like higher education, R&D, or transport;
- the compensation of distributional and other effects of rapid structural changes connected e.g. with a low degree of protection of domestic industries; and
- more regulatory activities of all kind necessitated by needs to adapt to international developments (e.g. standards).

The nation state is both, the subject and object of global environmental policy learning and lesson-drawing (benchmarking)

The national government is the subject of policy learning about how to solve environmental problems. At the same time national governments are looking for best practice, observing other governments (Rose 1993, Bennett 1991, Kern et al. 2001). Successful environmental policy innovations—institutions, instruments, strategies—thereby are often adopted by other governments. This improvement by imitation is an important mechanism of global environmental policy development and policy convergence. International institutions such as the OECD, UNEP or special regimes play an important role as policy arenas for pioneers and as agents of diffusion of environmental policy innovations. This role of the seems to be more important than the creation of policy innovations by the international institutions themselves. Figure 1 shows some examples of the diffusion of environmental policy innovations—such as Environmental ministries or green plans—from pioneer countries to the rest of the world. The speed of diffusion has increased in the 1990s. It may imply capacity building on the national level, even if the divergence of capacities (behind the convergent policy patterns) remains remarkable.

Policies are differently affected by globalisation

The international pressure on wages, taxes on mobile sources and social security provisions is a reality in times globalisation (Scharpf 1998). Environmental but also health or security standards have its own (e.g. WTO) rules and its own logic in international regulatory competition. The reasons why environmental policy is different seem to be extremely important and need special explanation:

There is no "race to the bottom" in environmental policy—but why?

Several empirical cross-national studies have rejected the RTB-hypothesis.[80] Strict environmental policy is

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[80] "We find no race to the bottom ... countries with more open trade regimes have more stringent regulations"

no strong incentive to de-locate "dirty industries" into developing countries with re-imports into rich countries (Jaffe et al. 1995, Jänicke et al. 1997). Many arguments now are well-known meanwhile (Vogel 2001, Wheeler 2001, Drezner 2001): Countries and companies that trade with countries with strict regulations tend to have themselves stricter policies (Eliste and Fredricksson 1998, Foljanty-Jost 1997)—the largest markets are rather strictly regulated. The globalisation of environmental policy partly has changed the framework conditions of the world market (Jänicke and Weidner 1997, Weidner and Jänicke 2002, Vogel 2001). Regulatory competition in environment, often creating first-mover advantages for national economies. It is part of the global competition (Porter 1991, Wallace 1995). It is essential to the development of "environmental lead markets" (Jänicke and Jacob 2001). Strict environmental regulations (within limits) remain a possibility to protect national industries. Multinationals tend to use the same standards everywhere (Wheeler 2000). Differences in environmental standards tend to decrease; generally they are less important than differences e.g. in labour costs or taxes.

I would like to add two arguments:

- The environmental issue has become a dimension of general technological progress. 40% of the innovations in 2010 are supposed to be relevant for environmental improvement (Faucheux 2000).
- The environmental issue has become important in the inter-national competition for innovation—there is a close correlation between strict environmental regulation and competitiveness.

Globalisation has created a policy arena for pioneer countries, at least in environmental policy

Pioneering environmental policy of certain (highly developed) countries was always possible since 1970. And never before was the influence of small innovative countries in global policy so important than today in the field of environmental policy (Andersen and Liefferink 1997, Jänicke and Weidner 1997, Jänicke and Jacob in this volume). This means that political competition and pioneer roles of countries have become relevant. But political competition needs an arena. Here the situation has improved since the end of the cold war (and its dichotomic policy arena). International institutions like the OECD or the UNEP, but also global networks of all kind provide a basis for benchmarking and competition in global environmental policy. The hard core being regulatory competition, giving support to domestic innovative industries or protecting the national regulatory culture against pressures to adapt to policy innovation from abroad. This countervailing mechanism against the neglect of environmental considerations in the global economy may be not strong enough, but it can be improved.

Pioneer countries in environmental policy are highly competitive

The Global Competitive Report shows a remarkable high correlation (R^2 = o.89) between ambitious environmental policy and the competitiveness of a country (Global Competitiveness Report 2000, Porter 1999). Other studies have revealed a similar relationship (Sturm et al. 2000). Of course, this no causal proof. The causal relation can go in both directions; also third factors (e.g. the GNP per cap.) may be important. But in the light of such a correlation nobody can longer insist in the traditional economic argument of an immanent contradiction between competition and a demanding environmental policy. The strong correlation of the "third factor" GNP can be explained by the formula: Highly developed countries are characterised by both, high perceived environmental pressure and high capacity to react.

New technologies as a rule start from national "lead markets"

And the ecological modernisation of the world market depends on national lead markets for environmental innovations (Jänicke and Jacob 2001, Beise 2001). A lead market is "the core of the world market where the local users are early adopters of an innovation on an international scale" (Beise, 1999: 4). The US as lead market for the internet, Japan as lead market for fax, or Finland as lead market for mobile phones are well-known examples. Empirically lead markets are characterized by e.g. high per-capita income, demanding, innovative buyers, high quality standards and pressure for change (see also Meyer-Krahmer, 2000).

(Eliste/Fredricksson 1998). National environmental pioneer policy can create "first-mover advantages" (Ashford 1979, Porter/van der Linde 1995, Wallace 1995). Bangladesh, India, Indonesia, and Thailand "are fast adopting industrial pollution control standards similar to those in developed countries" (Hettige et al. 1996).

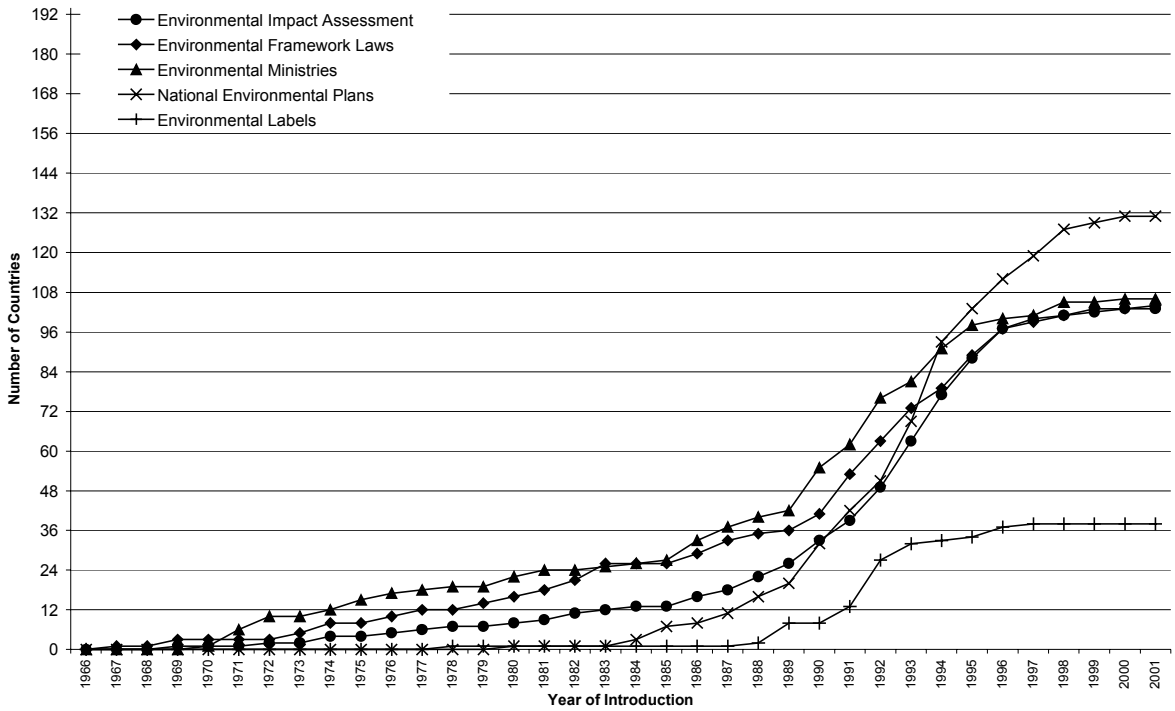

Figure 1: The Global Diffusion of Environmental Policy Innovations (Source: Busch and Jörgens 2002)

NATIONAL ENVIRONMENTAL REGULATIONS AND COMPETITIVENESS:

- "How an industry responds to environmental problems may, in fact, be a leading indicator of its overall competitiveness" (Porter and van der Linde 1995).
- "...tough regulations will stimulate innovations, making firms generally fitter and more competitive" (Wallace 1995)
- The ecologically innovative position of Japan's main export branches "was not brought about by ...political pressure, but rather by the...fear of decreased competitiveness in the European market" (Foljanty-Jost 1997).
- "... measures for environmental protection (that) act as trade barrier will be the international trend. Thus ... Korea will ... strengthen environmental policy measures ... to improve the ... competitiveness of Korean companies" (Korean Ministry of the Environment 1995).

Lead markets for *environmental* technologies, however, are characterised by additional factors. They typically are not only stimulated by higher environmental preferences of consumers in that country, but also by special promotion measures, or by political intervention in the market. A lead market for environmental innovations relates to global environmental needs and—due to market failures—it is strongly dependent on government support, sometimes also support from NGOs such like Greenpeace or the media.

Here again the role of the highly developed nation state and of pioneer countries is important. The global economy and its multinational enterprises still need places in the world, where the risky take-off of a new environmental technology finds public support and innovative buyers who are willing to pay a higher price and accept the teething problems of that technology, before it is cheap and effective enough to succeed on global markets. The regulators in Denmark and Germany created supporting market conditions and the customers of electricity in both countries paid the high price for wind power technology, until it was attractive enough for the global market.

Environmental policy innovation as well as regression are caused primarily at the national level

In an expert inquiry for 20 different countries of the world we have asked: What are the main restrictive sectors in environmental protection. The answer was: First the energy sector, second road traffic, third agriculture, fourth the construction sector (Jänicke and Weidner 1997). This are actually not sectors under hard global competition, partly the contrary is true (agriculture, the power industry, the construction

industry strongly depending on public demand). And often it is the nation state who resists international regulation. Countries like the US, Japan, the UK or, more recently, Denmark are examples of the double option of being innovator or laggard in environmental policy.

The nation state will remain the "local hero", not least in the field of environmental protection

There is no functional equivalent to national governments as highly visible, legitimised and competent territorial actors and protectors (Willke 1992). To whom could we address our complaints on environmental disruptions or issues such as BSE if not to this actor? Governments on the other hand have no exit option. And they need both, a material and political base. They do not react to economic pressure alone. The legitimation they need necessitates a broader orientation. The environment is something that cannot be ignored. Therefore national governments try to find at least compromises between economy and ecology. The answer is technology. As far as technology can provide solutions for environmental problems (in many fields we need more far-reaching "structural" solutions), the potential of national policy action may be higher than generally assumed. This, however, is essentially restricted not only to technology, but also to the more advanced countries.

Global environmental governance strongly depends on both the competence and creativity of national governments and the international system as a complex mechanism of policy diffusion and co-ordination

Of course, the "horizontal" view on the role of national governments could be no alternative to the "vertical" view on international institutions. The more interesting question is, whether international regulation or the competitive role of pioneer countries is the main motor of global environmental policy development. In this article the role of the pioneers, of innovation and diffusion has been underlined. We need much more research in the role of (different) national policies and of the mechanism of political competition in the global arena to give an answer to the question. But even if the competitive pressure (both in policy and technology) caused by pioneers in environmental policy would prove to be the most forceful driving force, the international institutions world play an important role: as policy arenas and as agents of diffusion.

Concluding Remark

This short article should not be misunderstood as an optimistic picture of globalisation. In general we are not very successful in the field environmental protection. The global economic development increases at the same time the level of environmental pressure (e.g. in the field of transport) and the capacity to react to environmental problems. The race between both tendencies may not be won by environment policy. The question is however, whether globalisation is the main problem. My point was moreover, the potential of the advanced OECD countries to change things by a pioneering policy, stimulating international competition more that relying on weak (and weakly implemented) treaties. Let me finish with a statement of David Vogel, one of the leading experts in this field: "In sum, the economic dimensions of globalisation have had little, if any, impact on lowering national regulatory standards, while the social and political dimensions of globalisation have, on balance, contributed to the strengthening of national regulatory standards" (David Vogel, 2001).

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Global Environmental Change and the Nation State: Lead Markets for Environmental Innovations

*by Martin Jänicke and Klaus Jacob**

The article asks for opportunities and potentials for an effective ecological modernisation[81] in the context of economic and political globalisation. Contrary to the race-to-the-bottom-hypothesis empirical research on the development of environmental policy reveals that it is most often *pioneering nation states* that push for advances in global environmental policy. As far as these policy innovations are technology based, aiming at an improvement of the conditions for the development of environmental innovations and/or their diffusion, these pioneering countries often serve as regional starting points for new technologies. These phenomena might be analysed in the framework of "lead markets" for environmental innovations. A lead market is the "core of the world market where local users are early adopters of an innovation on an international scale" (Beise 1999). Lead markets are empirically characterised by high per-capita income, demanding and innovative buyers, high quality standards, political pressure for change and flexible, innovation-friendly framework conditions for producers and users. Unlike lead markets for normal technical innovations, *environment-friendly or sustainable* technologies are specific insofar as they are problem-oriented and depend strongly on political influences. In this context pioneering national environmental policies are indispensable.

It is the high-income countries that are able to afford the necessary investments in R&D for the development of new technologies. Many of them have also the demand conditions that enable environmental lead markets. These markets have to deal with the teething troubles of innovations, and they have to provide the pay back of R&D investments. They demonstrate the feasibility of technologies on a large-scale application. Successful lead markets are not only connected with potential first mover advantages, they also can attract investors for environmental friendly technologies.

Political strategies for the constitution of lead markets can be distinguished in supply-side (research-)policies aiming at an improvement of conditions for R&D, demand-side (environmental-)policies, aiming at an safeguarding of environmental innovations, and finally strategies aiming at a speeding up of the diffusion of environmental policy innovations which are able to stimulate demand in other countries. The article will discuss the potential role of lead markets in the global process of the ecological modernisation, here conceived as innovation and diffusion of clean(er) technologies. It will give special consideration to empirical and theoretical work on the interlinkages between economic competitiveness and environmental policy.

The article is explorative in nature, as there is a lack of research on the mechanism and conditions for the successful making of global markets for environmental innovations. It should be understood as an overview and systematisation of aspects of global ecological modernisation with special regard to lead markets for environmental innovations.

Globalisation and national environmental policy capacity

The greening of international markets strongly depends on national pioneers in environmental policy. But is pioneer behaviour of nations possible in the context of globalisation? Many scholars of economics arguing that economic globalisations, i.e. the liberalised movement of capital and goods across borders is a strong impediment for national policy makers in the field of environment (for an overview see: de Vries 2001; Drezner 2001; Bernauer 2000). Since environmental standards do increase ceteris paribus the costs for production or products, industry will move to countries with the lowest standards. The same holds true for every other fields of public policy which may provide additional financial burden, such as social policy, taxes, etc. In order to become the most attractive location for firms, regulators are expected to compete for the lowest standards, lowest rates of taxes, etc. Economic globalisation leads to a *"race to the bottom"* or to de-regulation to attract foreign investments. This phenomenon of deregulation became known as the Delaware effect of globalisation (Vogel 1995). It was in Delaware where a US wide competition on deregulation of corporate chartering began. In the US charters are granted by individual states,

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81 See Jänicke 2000 for a discussion of the term ecological modernisation and its implications for environmental policy.

but all states are required to recognise each other's charter. In the course of this competition, the race to the bottom was won by Delaware by lowering the level of protection for employees, shareholders, and customers.

Although possible negative impacts of environmental policy on competitiveness of firms plays a strong role in political rhetoric, empirical studies showing a different picture. According to David Vogel (1995, 1997, 2001) economic integration and strict regulation is not as antagonistic as it can be expected. High standards in important markets may force foreign producers to adapt to these standards by which foreign governments react by raising their own standards. Furthermore, due to scale effects in production but also to obtain the image of an innovative firm, it may be sensible for firms to adapt to the higher standards for other markets as well on a voluntary basis. A prominent example are exhaust gas standards for cars set by California which lead to a world wide adaptation by car manufactures which became known as the California effect.

It is a question open to empirical investigation if this example of a successful convergence of environmental standards on a high level of protection may be generalised. It has been argued that this mechanism may apply to product regulation only (Vogel 1997; Scharpf 1999). However, the distinction between products and processes is not selective since all process technologies are products as well (e.g. wind mills). Furthermore, there is empirical evidence for a spread of industrial pollution control standards to developing countries (Hettige et al. 1996).

Regarding the expected decline in competitiveness by environmental policy, the race-to-the-bottom hypothesis suffers from several highly questionable assumptions: It assumes that environmental regulations impose costs for producers that affect location, regardless of differences in labour productivity. It also assumes that governments react exclusively to the preferences of the international capital, ignoring the preferences of voters or interest groups (Drezner 2001). Last but not least, the race-to-the-bottom hypothesis not only overestimates the importance of environmental costs and the differences in regulatory costs but also the general role of prices, thereby ignoring the role of innovation in the global competition. The rising importance of the environmental issue in the competition on innovations may be the most interesting counter argument (e.g. European Commission 2001).

The Porter Hypotheses on environmental regulation and competitiveness

The Porter hypothesis argues that a strict environmental policy can improve competitiveness of firms and sectors (Porter 1990; Porter and van der Linde 1995; also Ashford 1979) may be split into two distinct parts (see Taistra 2001): First, a competitive advantage might be achieved in case of a strict environmental policy which, at a later stage, diffuses internationally. If there has been a development of technologies in response to strict environmental standards, industries (not necessarily the polluting industry itself), might be able to export their technologies. Their competitive advantage may be based on learning effects or patent protection of their innovation.

Second, strict environmental policy might lead to innovation in the polluting industry itself which is able to compensate or even overcompensate for the costs of adaptation. This part of the Porter hypotheses has been labelled the "free-lunch" or even "paid lunch" hypotheses.

This second case refers to inefficient patterns of production. The existence of considerable inefficiencies is not expected by conventional economic theory. Possible explanations for the broad empirical evidence (see e.g. case of cadmium substitutes in box 1) supporting this part of the hypotheses, might be seen in the fact that both regulators and enterprises most often have a static view when evaluating the expected costs of environmental regulation. Strategies for environmental protection are usually developed on the basis of given technologies, products and preferences. Policies are most often formulated in a short-term perspective only. All this leads to a policy that is based on the state of the art, instead of being oriented on the technical potentials.

According to Porter, environmental policy should choose instruments stimulating innovations that are able to take advantage of the potentials of technologies rather than stimulating the diffusion of existing technologies. Furthermore, national environmental standards should be a slight precursor for other countries. However, a wide gap between the different national standards should be avoided in order to beware of idiosyncratic solutions.

The "Porter hypothesis" has been supported by policy science research on environmental pioneer countries (Wallace 1995; Jänicke and Weidner 1997; Anderson and Liefferink 1997). There have been always national pioneer countries in environmental policy. In the context of globalisation these countries have gained additional importance—just in opposite

to the "race to the bottom" hypotheses. They are the paramount protagonists of the development of international environmental policy. In contrast to this important role, international institutions are the policy arenas for this pioneers or agents of diffusion of their best practice. It is mainly a few highly developed OECD pioneering nation states which pushes technology-based measures for environmental protection. For these countries the competition on quality which is based on innovation—rather than competition on costs—seems to be the primary push.

Box 1: Lead Markets for Environmental Innovations: The Case of Substitutes for Cadmium in pigments, coatings and plastics

In 1979 Sweden was the pioneer among western industrialised countries in regulating the use of cadmium in pigments, plastics and for galvanic coatings. The regulations asked for a general prohibition of use while providing far reaching exemptions for those applications that were perceived as indispensable. The industry was very much in opposition against the prohibition, arguing that the Swedish market is too small for a separate, cadmium free line of production, while in the rest of the world the metal is still in use. However, soon after the regulation was issued, a process of substitution started for example in the car industry of Western Europe and the US. Some manufactures advertised cadmium free cars as environmentally sound products in all over Europe. Other substitutes, as for example organic pigments for a range of applications were even cheaper than the original cadmium pigments and by this a rapid diffusion of this technology took place. In other applications, however, the substitution was rather slow and new pigments and stabilisers had to be developed.

In the mid-1980s other European countries, namely Denmark, the Netherlands and Switzerland announced plans to take over the Swedish standards. In order to avoid trade barriers, the European Commission took over the initiative to regulate the use of cadmium. Their proposals, which were finally adopted in 1991, were oriented at the Swedish standards. At this point of time, the European industry already practised the techniques that became obligatory by the European regulation.

Sweden has been the lead market for certain cadmium free technologies (however many applications such as in batteries and emissions of cadmium to the environment, such as by fertilisers remain unresolved), by setting the standards and triggering a world wide adjustment of industry. To a large share, the later diffusion of the regulations in Europe only fixed the technical standards already practised. Swedish industry, however, is not a major producer of cadmium substitutes and therefore was not able to achieve advantages in competitiveness.

Governments do not have an exit option but must react to functional imperatives of their countries. The global economy and global competition steadily creates pressure on nation states in several fields, e.g. fiscal policy, employment, social security, infrastructure, higher education and R&D policy, and last but not least environmental policy. In a cross-national study David Cameron already in 1978 came to the conclusion that open OECD economies tend to a higher share of public expenditure (Cameron 1978). Other more recent studies came to similar conclusions regarding both, size *and scope* of government activity in globalised economies (Garett 1998; Bernauer 2000). The underlying causalities for these phenomena may be disputed. We expect, however, that open economies need more government activities, both to enable international competition (e.g. by providing the infrastructure or an effective innovation system) and to counteract its problems (e.g. by compensating its losers). This pressure for action operates contrary to a diminishing importance of the nation state. Therefore, it may be not surprising that developed OECD countries which are highly integrated into the world market are also more active in environmental policy (Wallace 1995; Jänicke and Weidner 1997; Andersen and Liefferink 1997). According to Eliste and Fredriksson (1998) countries with an open trade regime generally tend to have more stringent environmental regulation.

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Table 1: The Pioneer Countries in Environmental Policy[82]: Policy Innovation or Early Adoption 1970-2000[83]

Country	1970—1985	1985—2000
Sweden (11):	7	4
USA (10):	8	2
Japan (9):	8	1
Denmark (9):	5	4
Finland (8):	4	4
France (7):	5	2
Germany (7):	5	2
The Netherlands (7):	3	4
UK (6):	4	2
Canada (6):	2	4
	51	29

The nation state remains the most competent and best-organised actor (alongside multinational enterprises) in the global arena. While there has been a (most often voluntary) transfer of sovereignty to international institutions, nation states gained additional opportunities by concerting globally their actions. Examples can be found in fields like nature conservation, toxic waste control (Basel convention), or the general environmental strategy (Agenda 21). But also the concerted consolidation of national budgets is an important example. Therefore, the decline of national sovereignty should not be confused with a decline of capacity to solve national problems.

There is an ongoing debate in empirical economic research about the question of whether a pioneering role in environmental policy influences the competitiveness of firms, sectors or nations. A number of studies on technologies, sectors, firms and countries have been published which in general support the expectations of the Porter hypotheses (for an overview: Taistra 2000; 2001; furthermore Jaffe et al. 1995; Hübner and Nill 2001; Sturm et al. 2000; Esty and Porter 2000).

All of these investigations are not able to model the *causal* relationship between economic and environmental performance. At least, their high correlation giving further evidence for the thesis that an ambitious environmental policy does not harm competitiveness. Furthermore, they are giving evidence once again, that a well-developed economy is a prerequisite for the development of a successful environmental policy. It is the highly developed countries which are characterised both by high environmental pressure (both objective and subjective, induced by high education and income) and high capacity (encompassing the institutional basis, administrative competence, economic/fiscal resources, knowledge, and the strength of NGOs) to react on it.

The role of pioneer governments is especially interesting if we turn to the question of greening of the global markets and the establishment of *lead markets* for environmental innovations.

Lead markets for environmental technologies

Lead markets are the geographical starting points of global diffusion processes. Lead markets generally are "geographic markets which have the characteristic that product or process innovations, which are designed to fit local demand preferences and local (...) conditions, can subsequently be introduced successfully in other geographic markets as well and commercialised world-wide without many modifications. In the model of international diffusion of innovations a lead market is the core of the world market where the local users are early adopters of an innovation on an international scale" (Beise 1999: 4). The US as lead market for the Internet, Japan as lead market for fax, or Finland as lead market for mobile phones are well-known examples (Beise 2001). We understand lead-markets for environmental technologies as regional or national markets, which were stimulated by higher preferences for environmental goods in a given country, by specific supporting measures, or policy interventions, which are able to influence the markets in other regions effectively, trigger reactions of adjustment and finally lead to an international diffusion of the new technologies. By this, we take again into account, that *environmental* innovations have to be largely ascribed to governmental (or NGO) activities.

There are *demand* driven lead markets, i.e. nations with higher environmental standards, leading to a widespread adoption to environmental friendly technologies. Examples for this case are the Californian exhaust gas standards for automobiles or the Swedish

[82] Definition: PCEPs are innovators or early adopters of new environmental policy measures that diffuse into other countries (thereby contributing to the development of global environmental policy).

[83] Introduction of 20 new environmental policy institutions, laws or instruments: innovation plus first 3 adoptions. Preliminary data.

regulations regarding the use of cadmium (see Box 1). Other lead markets are driven by a *supply* of innovative technologies. Frequently, the producers of technologies seek to extend their markets and therefore lobbying for an international support of their technologies. The example of CFC substitutes (see Box 2) where the leading US based company of CFCs, Dupont supported the international regulation, after investing in the development of substitutes and thereby ensuring several patents for their production.

Characteristic (Indicator/Measurement):	General Hypothesis:
Environmental policy innovations (Policy monitoring, FFU data)	Pioneering environmental policy is possible
Strict environmental regulation (e.g. Environmental Regulatory Regime)	Strict environmental policy is possible (cf. Porter)
Innovation or early adoption of environmental technologies (Monitoring of environmental technology diffusion)	PCEPs having the capabilities for technology based environmental strategies and are by this candidates for becoming lead markets
High economic income (GNP/cap.)	High income means both, high (perceived) pressure and high capacity for environmental policy
High competitiveness (e.g. Competitiveness Report)	Environmental issue is important for the competition on innovation
Open economy (x) (export/import ratio of GNP)	Economic globalisation is no impediment for active environmental policy
Strong role of government (x)	No general "withering away" of governments in times of globalisation

(x) Mainly true for the present PCEPs (forerunners within the EU, and Canada).

Jänicke/Jacob 2001

Table 2: General Characteristics of the Present Pioneer Countries in Environmental Policy (PCEP

For a targeted ecological modernisation of international markets the potential of nation states for a framing of national markets might gain considerable importance. The history of environmental protection is rich in examples for lead-markets: it encompasses the legally enforced introduction of catalytic converters for automobiles in the USA, desulphurisation technologies in Japan, the Danish support for wind energy or the CFC free refrigerator in Germany (Box 2). Another impressive example is the global diffusion of chlorine-free paper, from the political activities by Greenpeace and the EPA in the USA, by way of the introduction of chlorine-free paper whitener in Scandinavian countries and various Greenpeace campaigns in Germany and Austria, right through to effective political market intervention in south-east Asian countries like Thailand (Mol and Sonnenfeld 2000).

Box 2: Lead Markets for Environmental Innovations: The Case of Substitutes for CFCs as Coolant in Refrigerators for Private Households

In the late 1970s the CFCs, used among others as coolant, came under the suspicion of damaging the ozone layer. Subsequently, an international regime developed steadily aiming at a regulation and substitution of these substances. The US based company Dupont was the market leader for CFCs, but also most active in developing the chlorine free HFCs as a substitute for many applications. The prospects of a technically and economically feasible alternative for the CFCs accelerated the negotiations for a global regulation as it was laid down in the Montreal Protocol of 1986. While HFCs do not harm the ozone layer, they do have a considerable global warming potential and therefore are criticised by environmentalists as well. In the beginning of the 1990s, Greenpeace Germany initiated the development of a refrigerator with hydrocarbons (HCs) as coolants. At first, the major producers of refrigerators refused to adopt this technology, because these gases are combustible. However, shortly after a small producer together with an university institute developed a prototype which met the safety standards, and Greenpeace started a public campaign in support of this producer, the major German enterprises took over this technology. From a global point of view, at this time, three different technologies as coolants for refrigerators were on the market: CFCs were still produced in developing countries such as China or India, HFCs gained a large

market share in Northern America, Japan and Southern Europe, and HCs soon became the leading technology for refrigerators used in private households in Northern Europe. The Deutsche Gesellschaft für Technische Zusammenarbeit (gtz), a government organisation for international development cooperation, started a project in India to develop a plant based on HC technology which was expected to launch its production at the end of the 90s. NGOs, such as the Friends of the Earth or Greenpeace campaigned successfully for the adoption of HC technology in China or in Africa. Countries in the South are particularly interested in this technology, because there are no licence fees to be paid as for the patented HFC technologies.

While the USA has been the leading country in the regulation of CFCs as well as the development of the HFCs as one possible substitute in the 80s, Germany successfully took over the leading position in this particular share of the market, mainly driven by NGOs and subsequently developed a policy in spreading this technology to markets in the south.

By setting up demanding environmental standards, pioneer countries in environmental policy may send out a twofold signal beyond the boundaries of their national market:

1. A national market for environmentally friendly technology acting as a basis for subsequent expansion to bigger markets. The pioneer country demonstrates the feasibility of its standards and regulations. Subsequently other countries adopt the innovative regulation. For example, the German tax preference for fuel-saving cars (1997) has supported suppliers in that country (Volkswagen, Mercedes). The diffusion of this instrument, e.g. throughout the EU, can bring appropriate market expansion. Frequently, the national producers support the international diffusion, if they were able to adapt successfully to the new standards (examples in Jacob 1999). A diffusion of regulations will be more likely if a country has attained the image of being a pioneer. It is only a few countries nowadays, mostly member states of the EU (see Table 1) which serve as the benchmark for the development of environmental policy.
2. The pioneer market with its demanding environmental regulations can, however, also send out signals to the supply side outside the domestic market. For example, California, with its stricter emission rules compared with the rest of the USA, was able to exert a general influence on the car industry word-wide (Vogel 1995). Similarly, Denmark, in 1994, with its targeted promotion of energy-efficient refrigerators, was able to prompt European suppliers to offer such devices (Jänicke et al. 1999). In cases like these, competitive companies can advertise their ability to supply such demanding market areas as a sign of their technological competence. It can be cost efficient to orient the production on the highest standards, if there are scale effects.

An ongoing research project carried out for the German Ministry for Research and Education BMBF on "ecological lead markets" (conducted by the DIW, FFU, IÖW, and ZEW) aims at identifying both framework conditions and policy measures for the establishment of lead markets on a more systematic empirical basis.

An environmental lead market is the core of the world market for a product or process where national policy or non-governmental influences successfully have created an incentive structure for users to adopt an innovation relating to a (manifest or latent) global environmental problem and the global dimension of the problem creates a *potential* demand also in other geographic markets. As a rule environmental lead markets are created by national policy innovations (e.g. standards) which potentially diffuse into other countries. There is a close interrelationship between policy innovation/diffusion and technical innovation/diffusion. The diffusion of environmental policy innovations is supported both by horizontal imitation ("benchmarking", "lesson-drawing") and by international organisations.

Empirically lead markets for normal technologies are characterised as follows:

General characteristics of lead markets (see also F. Meyer-Krahmer 1997):

- high per-capita income, low price elasticity
- demanding, innovative buyers, high quality standards
- Problems, pressure for change and innovation
- flexible regulation, innovation-friendly framework conditions for producers and users
- product standards that are acknowledged also in other countries.

Lead markets for *environmental* technologies, however, are characterised by additional factors. They typically are not only stimulated by higher environmental preferences of consumers in that country, but also by special promotion measures, or by political intervention in the market.

They provide marketable solutions for global environmental needs, offering at least improvements for

environmental problems that are mostly encountered world-wide or at least in many countries. Thus technological solutions to environmental problems enjoy, right from the outset and by their very nature, potentially larger markets. Lead markets affect competition in other market regions, trigger appropriate responses and adaptations, and thereby lead to the international diffusion of the new technology. The creation of lead markets for an environmental technology takes place in two stages, the first being the most important:

1) Struggling for success on the national market: This includes the establishment of a national market (not only a niche market), successful incremental improvements of the product and its production. Government instruments may be standards, subsidies, charges, labels, public procurement, network management, or EMAS (demand of firms).
2) Government support for technology transfer by activities within international organisations (e.g. diffusion of the supporting policy pattern), bilateral actions with strategic countries (e.g. the environmental co-operation between Germany and China), special international conferences, use of the international media, co-operation with international NGOs. More important may be—on the demand situation—the diffusion motor of benchmarking and search for best practices, which in many countries is an institutionalised mechanism, today. In addition, the co-operation with multinational companies may be a relevant transfer mechanism.

If successfully established, such markets may fulfil a range of functions: From a *global* perspective they provide marketable solutions for typical environmental problems. Lead Markets in high-income countries are able to raise the necessary funds for refinancing the costs for development and "learning". This is true for environmental innovations in particular. There is a need to survive the teething troubles of new technologies. They are demonstrating both the technical and the political feasibility and thereby giving a stimulus for other countries and enterprises to adopt to their pioneering standards. From a national perspective ambitious standards or support mechanisms might safeguard the first mover advantage for the own industries. Furthermore, the creation of demand by ambitious policy measures can attract foreign investors which are interested in the development and marketing of environmental innovations. (It is not by chance that there has been recently some prominent foreign investment for the production of solar cells or for fuel cells in Germany.) Finally, a demanding policy that holds economic advantages additionally legitimates the national policy makers, sometimes providing them also with attractive roles in the global arena.

Possible functions of environmental lead markets:

Global functions:

- Problem solving function regarding global environmental needs
- Return function for R and D and learning costs (possible in high-income countries)
- Technological demonstration function (benchmarking)
- Political demonstration function (lesson-drawing).

National functions:

- Competitive function, potential first-mover-advantages
- Potential attractiveness for foreign direct investments
- Increased market value of environmental and technological reputation
- Political legitimisation function (for environmental policy, national policy actors as global players)

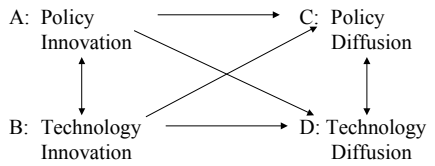
Jänicke and Jacob (FFU) 2001

The interplay between the diffusion of environmental policy innovations and environmental technology

There is a convergence of interests between innovative firms and environmental policy makers. Suppliers of environmental technology seek the support of politicians in order to extend their markets and politicians are always looking out for technological options, because precisely these are much easier to implement than any sort of structural intervention. Policies based on technologies that have demonstrated their feasibility are more likely to diffuse to other countries.

Innovative policy measures of pioneering countries do spread internationally very much alike technological innovation. Recent comparative research on the diffusion of environmental policy among countries reveals an astonishing international convergence in the development of national policy patterns (Kern 2000; Jörgens 1996; Kern/Jörgens/Jänicke 1999). According to this research, the rate of diffusion depends on (1) the type of policy innovation (e.g. distributive measures diffuse more easily than redistributive measures), (2) the type and difficulties of the underlying problem, (3) the environmental policy

capacity of the potential adopters, and (4) the successful influence of international organisation—but also of strategic countries—in support of the diffusion. There is a range of international organisation (governmental organisations, but also international NGOs or business associations) which develop strategies to spread best practice in the field of environmental policy making. The OECD is active in this direction, but even the—reformed—institutional fabric of the EU seems comparatively favourable both for innovations and their diffusion (Héritier et al. 1994). The EU must firstly, at least in principle, accept a "high level of protection" in member states; it must secondly seek to harmonise innovations in environmental policy implemented at national state level.



Policy induced Diffusion
Technology Forcing
(A⇒B⇒C⇒D): e.g. US-Car Emission Standards (1970)
Political Initiative (A⇒B⇒D⇒C): e.g. Cadmium substitutes
Political Dominance
(A⇒C⇒B⇒D): no example yet?

Technology induced Diffusion
Technological Initiative
(B⇒A⇒C⇒D): e.g. wind energy
Technological Dominance
(B⇒A⇒D⇒C): e.g. CHP Technologies
Autonomous Diffusion (B⇒D): e.g. Incremental improvements of energy efficiency

Figure 1: Diffusion patterns of Environmental Innovation (Jänicke 2000)

The mechanism of international diffusion of policy innovations is favourable for the creation of lead markets for environmental innovations. On the one hand, the convergence of standards and regulations implies—in case of technology based policies—a widening of the market for technologies. On the other hand, the availability of technical solutions makes the diffusion of the corresponding policy innovation more likely.

However, the interplay between environmental policy and environmental technology in the case of innovation diffusion is characterised by a wide variety of possible constellations. Theoretically it is possible to distinguish between the following diffusion scenarios, depending on the factors leading to the political and technological innovations:

Technology forcing (A⇒B⇒C⇒D): A national environmental policy innovation in one country forces a technological innovation which diffuses if also the policy innovation is diffused (e.g.: catalytic converter technology in cars).

Technological initiative (B⇒A⇒C⇒D): An existing environmental technology induces a political innovation whose diffusion in turn encourages the diffusion of the technology (e.g.: wind energy in Denmark).

Political initiative (A⇒B⇒D⇒C): A national environmental policy leads to technological innovations whose diffusion in turn encourages diffusion of the policy innovation (e.g.: cadmium substitute 84).

Technological dominance (B⇒A⇒D⇒C): An innovation in environmental technology is successfully diffused and as a result receives political support both nationally and internationally (e.g.: combined heat and power in industry 85).

Political dominance (A⇒C⇒B⇒D): The innovation in environmental policy is successfully diffused before a corresponding technology is available (this scenario is, symptomatically, very rare in ecological modernisation).

Autonomous technological development (B⇒D): An innovation in environmental technology is successfully diffused without political influence; this case, beyond incrementally increasing energy efficiency in companies, seems to be rather rare.

Technological innovations do provide additional options for policy makers. For other cases, policy factors have been the major driving forces in the stimulation of environment-friendly technical innovations. The case of technology forcing has, however, been exceptional for environmental innovation (cf. Conrad 1998; Jacob 1999). So far, environmental policy has its merits in the promotion of the diffusion of technologies within and between countries. It can be observed, however, that policies promoting the diffusion do support incremental innovations.

Autonomous emergence and diffusion of innovations in environmental technology is the exception rather than the rule and such developments usually remain limited to incremental increases in efficiency in companies. The reverse borderline case is innovation in environmental policy where policy clearly exceeds the given technological possibilities.

The limits of ecological modernisation (in the "technocratic" sense) are thus defined by the limits of technology. However, these limits are dynamic. They can be extended by research (and by backing for research). For example, research into the develop-

84 The use of cadmium was regulated in Sweden in the early 1980s with their standards for substitutes being adopted by European industry. Not until the early 1990s, however, were these standards made binding by the European Commission (Bätcher/Böhm/Tötsch, 1992).

85 Combined heat and power (CHP) in industry spread largely autonomously, even though regulatory measures were intended to encourage its use in public power stations.

ment of procedures for reducing CO2 emissions, if successful, could substantially widen our room for manoeuvre in climate policy—even if only in the sense of end-of-pipe measures. The rapid diffusion of suitable policy innovations will then be as similarly predictable as the difficulty and slowness of a climate policy aiming at structural change of the energy sector which de facto places restrictions on established energy markets (coal, oil).

The variants of this interplay between policy and technology in any case are a central theme in research on the diffusion of environmental innovations, especially when it comes to selectively optimising such innovations.

Conclusions

Ecological modernisation can be conceived and has its strength as a market compatible strategy of technical environmental innovations and their corresponding policies supporting their diffusion. It is the (highly developed) nation state, which plays a crucial role in this context. In this perspective the function of international organisations can be seen more as policy arenas for pioneer countries and as agents of diffusion than as original policy innovators.

Furthermore, there is no race to the bottom in times of economic globalisation: The present pioneers in environmental policy are primarily open economies. There is also no general contradiction between competitiveness and demanding environmental policy, on the contrary, highly developed countries tend to integrate the environmental issue into the competition on quality. The highly regulated markets and their environmental standards—e.g. of the EU countries—have strong influence on other exporting nations. Global diffusion of best practice in environmental policy has become an important driving force for the diffusion of marketable, technical solutions for environmental problems that typically exist on a global scale.

However, up to now, there are serious shortcomings of an ecological modernisation. In fields such as climate change or ground water protection we need a substantial enhancement of environmental protection. We have to strive for more than *niche* markets for incremental innovations in a few countries. What we need are radical innovations that are applied on a global scale. The conditions for a global strategy of ecological modernisation are, however, not bad.

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The Innovation and Diffusion of 'New' Environmental Policy Instruments (NEPIs) in the European Union and its Member States

by A. Jordan, R. K. Wurzel, A. Zito and L. Brückner*

The use of 'new' environmental policy instruments (NEPIs), namely voluntary agreements and market instruments (eco-taxes, tradable permits and eco-labels) has grown substantially in recent years. Yet we know relatively little about the comparative politics of instrument use (Howlett and Ramesh, 1993). In other words, 'why [do] some instruments appear in the repertoire of some [political] systems and not others' (Anderson, 1971, 122). More specifically, are the pre-existing 'national repertoires' (Bennett, 1988, 439) being transformed, or are the new instruments being adopted and implemented in ways that reinforce those repertoires?

We first examine the different types of instruments investigated and consider the potential sources of innovation leading to convergence or divergence. We then analyse the pattern of instrument use within and across four EU member states (Austria, Britain, Germany, and the Netherlands). We then identify a number of independent variables that could explain the pattern of instrument use. The next part assesses three distinct theoretical perspectives which each give greater primacy to some of the independent variables identified than others. We then analyse how well these theoretical expectations match our empirical findings regarding the NEPIs assessed in the final part.

The politics of policy instrument innovation

NEPIs can be categorised into (1) traditional regulatory instruments, (2) voluntary agreements, (3) market-based instruments, and (4) informational devices. In this article, we concentrate primarily on voluntary agreements and market-based instruments (eco-taxes and tradable permits).

Regulatory instruments have been the mainstay of early environmental policy. Environmental voluntary agreements have been used in some member states since the 1970s although they have only recently been adopted on the EU level (CEC, 1996; EEA, 1997). Environmental taxes are widely but unevenly distributed across member states, although the EU itself has been unable to adopt any. Tradable permits are fairly new in Europe.

Bennett (1991) identifies a number of reasons, which might lead to a convergent pattern of policy innovation. These are as follows.

Innovation via emulation

That states consciously mimic one another by borrowing core aspects of what are perceived to be their most successful policies ('best practice') is a well-established feature. In the policy transfer literature, emulation roughly corresponds to the notion of 'lesson drawing' (i.e. voluntary policy transfer) (Dolowitz and Marsh, 1996, 346-7; Kern et al., 2000). In order to establish the existence of emulation analysts must show that: (1) innovation was occurring in one locality/time period; (2) actors from other localities/time periods were aware of this; (3) they emulated the innovator in their own jurisdictions (Bennett, 1991, 223; Dolowitz et al., 1999, 719).

Innovation via expert networks

The second factor accounting for voluntary policy transfer and policy convergence is through the networking of scientists and policy experts (Bennett, 1991). The interaction within the expert networks can lead to common problem definitions and solutions, which are then transferred to different jurisdictions. Once consensus has been achieved within an epistemic community, members return to their respective jurisdictions and try to re-define national preferences (Haas, 1995). Epistemic communities emphasise scientific knowledge and technical expertise which play a central role in environmental policy-making (Weale, 1992; Jänicke and Weidner, eds, 1997).

Innovation via international organisations

Policy convergence can also be induced when states create international organisations that may provide vehicles for epistemic communities and emulation. For example, the OECD (1991, 1997, 1999) has been highly active in promoting market-based environmental policy instruments. International organisations and regimes may also facilitate spillover pressures as convergence in some policy sectors generates a need for cognate policy areas to follow convergent paths (i.e. indirect coercive policy transfer) (Dolowitz and

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Marsh, 1996, 347).

INNOVATION VIA ECONOMIC COMPETITION

Economic competition and the creation of free trading areas can lead to the harmonisation of national environmental standards to prevent barriers to trade. Héritier and colleagues (1996) have identified a process of regulatory competition between EU member states that try to export their domestic environmental policies and problem-solving. However, the political structure of the EU gives actors such as the Commission an opportunity to act as entrepreneurs (Majone, 1991). The EU has much greater power than the typical international organisation and can apply considerable pressure on member states to implement policies (i.e. direct coercive policy transfer) (Dolowitz and Marsh, 1996, 347).

INNOVATION AROUND PARTICULAR PROBLEM TYPES

Bennett (1991) fails to mention that states following similar pathways of development may gravitate towards common policies and instruments which boils down to Lowi's (1964) oft quoted dictum that 'policy determines politics.' Hoberg (1986, 358) notes that "there is only one best way to resolve a problem, and, since nations at similar levels of industrial development confront a core of problems, responses will converge accordingly". It may well be the case that issues of economic efficiency (and thus market instruments) become more important in all states with maturing environmental policies. However, a particular NEPI in one country will not necessarily be functionally equivalent in another country that relies on a different policy instrument mix. It is possible that convergence (e.g. increased use of NEPIs across countries) and divergence (e.g. different national policy instrument mixes) takes place simultaneously.

The transfer of policy instruments

The following three distinct theoretical perspectives make different predictions about the nature of the NEPIs selection process (see Table 1).

'IDEAS DOMINANT' APPROACHES

The first perspective identifies ideas as the driving force behind the search for new policies and instruments. In other words, policy tools play an instrumental role. Policy makers have certain ideas and beliefs that drive the policy instrument selection process. Howlett and Ramesh (1993) argue that instrument selection is only one aspect of a much wider policy process, in which social learning is a dominant motive. Policy change is regarded as cognitive struggle between different groups to improve their understanding of the causes of policy problems and the suitability of particular instruments (Hall, 1993). Learning is an important aspect of the selection process: assessments of how well instruments have performed in the past inform current choices. Normally, instruments are simply recalibrated to reflect changing political demands, but occasionally sudden, unforeseen events and/or policy failures de-stabilise a policy area. They may trigger the adoption of new cognitive frameworks and lead to the adoption of policy instruments. Knowledge based expert networks play a dominant role in this process.

Two important examples of this approach are Hall's study of social learning and Sabatier's Advocacy Coalition Framework (ACF). In both Hall (1993) and Sabatier's (1998) accounts, ideas play a dominant role. They both stress the importance of voluntary policy transfer or lesson drawing (Rose, 1991) and would explain the adoption of NEPIs in terms of networks of expertise.

'CHAOS DOMINANT' APPROACHES

The 'chaos dominant' approach draws its inspiration from Cohen et al.'s (1972) work on decision making in organised anarchies. Here we find ideas looking for instruments, and instruments looking for decisional situations in which they can be advanced (Cohen et al., 1972, 3). Kingdon (1984) divides the policy process into three streams: a stream of *problems* requiring attention; a stream of *policies;* an independent stream of *politics*. Normally, the three streams run simultaneously. However, periodically, they are coupled in a single package (problem; proposal; political receptivity) labelled 'policy windows' (Kingdon, 1984, Chapter 8). These arise when: (1) there is a compelling problem (a problem window) and (2) something compelling in the political stream (a political window). When a window opens a policy solution can move through it and onto the agenda. However, successful advocates must move quickly as windows rarely stay open for long. Crucially, agendas are not just a reflection of power but also depend on luck. This creates the possibility of major policy discontinuities. In a chaotic world, NEPIs will be fitted fairly randomly to political problems, producing uneven patterns across different countries. One of the problems with Kingdon's model is that it does not seek to explain the variations in policy (instrument selection) across countries and sectors.

'SETTINGS DOMINANT' THEORIES

These theories begin with the assumption that in-

strument choice is dependent upon the political context. This view characterises many of the 'new' institutional theories (Hall and Taylor, 1996). National institutions contain 'standard operating procedures' that are only modified after becoming manifestly dysfunctional; any change is likely to be incremental. When confronted with new challenges, policy actors prefer to refine existing policy instruments before searching for new tools. The tendency to cling to what they know they are good at (e.g. policy instruments that 'work') rather than innovate with new ones, ensures that institutions (and policy instruments) endure long after they cease to be optimal ('competency traps') (March and Olsen, 1989, 53-67). When change does occur, decisions in the past will constrain it (path dependence). In contrast to the ideas dominant approach, institutions refract the pressure for change in a way that perpetuates existing arrangements. Thus, 'the common imposition of a set of rules will lead to widely divergent outcomes in societies with different institutional arrangements' (North, 1990, 101).

Bennett (1988) highlights the powerful impact of 'domestic constraints' in hindering policy convergence, manifesting themselves as *inter alia* 'policy legacies', foreordained instruments; and entrenched resistance from bureaucracies. Similar concepts appear in the environmental policy literature (Knill and Lenschow, 2000).

The settings dominant perspective argues that policy making tends to be incremental. Instruments that work with the grain of national institutions are more likely to be adopted than those that work against them. Linder and Peters (1989, 49-50) and Mol et al. (2000) identify national styles as an important determinant of policy instrument choice. Therefore, one would expect countries with a consensual or 'corporatist' policy style to be more likely to adopt voluntary agreements, than those characterised by greater conflict or a highly pluralist interest group system.

EXPECTATIONS OF THE APPROACHES

To conclude, *ideas dominant* approaches imply that actors would turn to NEPIs to implement their ideas. The potential for innovation, policy transfer and convergence is high. The *chaos dominant* approach is concerned with how policy instruments fit within given contexts but argue that the process is fairly unpredictable. Finally, the *settings dominant* approach suggests that policy instruments adapt slowly and imperfectly. While not entirely impervious to change, some policy instruments will perpetuate themselves. Therefore, policy transfer is likely to be limited to certain aspects of a particular type of NEPI that will be implemented differently in different states.

The use of NEPIs in Europe

VOLUNTARY AGREEMENTS

Germany and the Netherlands have adopted by far the largest number of voluntary agreements within the EU. The estimates for Germany range from 97 (by 1998) to 130 by 2001 (interviews in 2001). In the Netherlands more than 100 voluntary agreements exist (Mol et al., 2000, 5; EEA, 1997). Austria, on the other hand, had adopted only some 30 voluntary agreements by 2000. In Britain there were between ten and 20 voluntary agreements by the late 1990s. By 2001 less than ten EU-wide voluntary agreements existed (interviews in 2001).

Germany. Germany has the highest number and the broadest range of voluntary agreements within the EU (EEA, 1997, 30). It has made use of non-binding environmental voluntary agreements since the 1970s (UBA, 1999a, Öko-Institut, 1998). The importance of environmental voluntary agreements was increased by the Centre-Right (CDU/CSU/FDP) government's coalition agreement in 1994 which stated a general preference for voluntary agreements above traditional regulatory instruments (interviews in 2001; UBA, 1999a, 30). The Red-Green (SPD/Greens) coalition government, on the other hand, was initially highly sceptical about the use of voluntary agreements when it came to power in 1998. However, it soon developed 'a more relaxed attitude' and has accepted the adoption of several voluntary agreements in the energy sector in particular (interviews in 2001). Voluntary agreements to reduce climate change gases were put forward in 1995, 1996 and 2000 (BDI, 2000). The 2000 climate change VA has become a show case for industry which wants to prove that this type of NEPI works well even when it is used for a highly complex policy problem and involves a large number of actors.

German voluntary agreements are often put forward by industry 'in the shadow of the law' as reaction to government plans for legislation. This was the case for the above mentioned VA on climate change in 1995. Environmental NGOs have remained suspicious that industry's preference for voluntary agreements is mainly due to the desire to escape environmental regulation and/or eco-taxes. Industry, on the other hand, defends the wide use of voluntary agreements by pointing to the superiority of this type of instrument in terms of flexibility and its successful implementation in the past. Industry's views are largely shared by the Economics Ministry while the Environmental Ministry (BMU) and Federal Envi-

ronmental Agency (UBA) in particular have shown a stronger preference for a policy instrument mix including eco-taxes (interviews in 2001). Voluntary agreements are compatible with both traditional 'corporatist' features of German policy-making and strategies to reform the legalistic approach to environmental policy.

Netherlands. The spread of voluntary agreements in the Netherlands has increased significantly since the 1980s. Voluntary agreements fitted into a wider philosophical policy shift towards greater self-regulation which was supported by various governments in the 1980s (interviews in 2000). Subsequently voluntary agreements were adopted for a wide range of issues such as packaging waste and the reduction of volatile organic compounds (VOCs). However, throughout the 1980s Dutch voluntary agreements remained largely gentlemen's agreements. The 1990s witnessed the transformation of Dutch voluntary agreements into legally binding covenants which are negotiated within a relatively transparent decision-making process (Mol et al., 2000). The use of Dutch voluntary agreements became embedded within a wider debate about the modernising role of the state in what Mol and colleagues have called 'joint environmental policy-making' (Mol et al., 2000). The consociational and meso-corporatist features of Dutch policy-making though fading, are often seen as having facilitated the early political acceptance and wide use of voluntary agreements (Mol et al., 2000; van Tatenhove, 1993).

Austria. The traditional Austrian policy style is consensus seeking and exhibits meso-corporatist features (Lauber, 1997). However, by 2000 Austria produced only some 30 voluntary agreements, most of which can be found in the waste sector. Mol and colleagues attribute the comparatively low number of voluntary agreements to the rigidities of Austrian meso-corporatism (Mol et al., 2000). The social partnership (Sozialpartnerschaft) grants unions, which have traditionally been opposed to voluntary agreements (interviews in 2000), a considerable say within the policy-making system. Austrian environmental NGOs have also been hostile to the use of voluntary agreements (Mol et al., 2000; CEC, 1996, 28-29). Domestic pressure for growing use of voluntary agreements increased with the election of Austria's first ever Conservative-Right wing (ÖVP/FPÖ) coalition government which has shown little enthusiasm for using eco-taxes and placed less emphasis on the need for regulation. Austria's difficulties in implementing its relatively ambitious Kyoto commitments are likely to lead to the increased use of voluntary agreements.

Britain. Britain has made use of voluntary agreements only very sparingly (Jordan and Salmons, 2000). They are usually non-binding and often more akin to codes of best practice than formally negotiated agreements between the government and industry (Jordan and Salmons, 2000). Moreover, there is evidence that some of them have been ineffective. Britain's pluralistic interest group system with weak industry-wide or sector-wide umbrella organisations are an important explanatory variable for the low adoption of voluntary agreements within this jurisdiction.

The EU. By early 2001 there were only nine EU-wide voluntary agreements (interview in 2001). This low number can be explained with reference to concerns about legitimacy, legal uncertainty and transparency (Mol et al., 2000). The EU Treaty does not offer a legal basis for voluntary agreements which are negotiated between the Commission and industry outside the EU's formal decision-making procedures. Since the early 1990s, voluntary agreements have nevertheless become a more attractive policy instrument for the Commission which emphasised the importance of the principle of shared responsibility while being faced with the debate about the principle of subsidiarity and a harsher economic climate. In 1996 the Commission published a Communication on voluntary agreements which stated its intention 'to promote and facilitate the use of effective and acceptable Environmental Agreements' (CEC, 1996, 5). On the other hand, member state voluntary agreements have occasionally been replaced by EU legislation. For example, the EU's end-of-life vehicles directive, which regulates scrapped cars, replaced legally non-binding voluntary agreements in Austria, Germany and the Netherlands.

ECO-TAXES

Eco-taxes have long been used in Europe (Andersen and Sprenger, 2000; Andersen, 1994; CEC, 1997). The Scandinavian countries, Denmark, the Netherlands and France have adopted eco-taxes (on water and air pollutants) since the 1970s. Germany adopted a waste water levy in 1976 which, however, was implemented only in 1981 (Andersen, 1994, 136; UBA, 1994). Austria showed less enthusiasm for eco-taxes. Britain initiated national eco-taxes only in the 1990s but has since taken the lead with regard to the fuel escalator. Since the 1980s there has been a significant increase in eco-taxes in OECD countries (CEC, 1997; OECD, 1999; Andersen and Sprenger, 2000). In the late 1990s, eco-taxes amounted to an average 7% (ranging from 3.8 to 11.2%) of the total tax revenue in 17 OECD countries (OECD, 1999, 26).

Germany. Germany has made use of eco-taxes since

the 1970s. The early eco-tax measures were moderate in scope and often included major exemptions (Andersen, 1994). Over time eco-taxes were extended incrementally (Huckestein, 1996; UBA, 1999b).

The German Environmental Expert Council demanded the use of economic instruments as a supplementary policy tool for regulation as early as the 1970s (SRU, 1974). However, until the 1980s the debate about eco-taxes was largely limited to academic circles. Environmental economists propagated the advantages of eco-taxes compared to traditional regulation. Their abstract theories were later popularised by slogans such as 'prices must tell the ecological truth' which reached an audience well beyond academic circles (Krebs and Reiche, 1999; UBA, 1999b). However, the cost of unification, increasing fears about Germany's future as a production and investment location *(Standort Deutschland)* and continued industry opposition prevented the (Centre-Right coalition) government from adopting unilaterally a national eco-tax. In the early 1990s, Germany (supported by the Netherlands and Denmark) pushed for the introduction of an EU-wide carbon dioxide/energy tax (Zito, 2000; Jordan, 2000; Wurzel, 1996). However, the proposal for a supranational tax was vetoed by Britain on sovereignty grounds.

The coming to power of Germany's first ever Red-Green coalition government in 1998 suddenly provided a policy window for the adoption of an eco-tax reform for which cross-party political support had already been faltering in the late 1990s (interviews in 2001). It introduced an ecological tax reform in April 1999. According to one BMU official (interview in 2001) 'the adoption of the eco-tax would no longer have been possible only half a year later.' The eco-tax reform quickly became a controversial domestic politics issue when the main opposition parties (CDU/CSU and FDP) demanded the scraping of the eco-tax reform after massive protests against rising fuel prices in 2000. This demand was rejected by the government's parliamentary majority although the Red-Green coalition government adopted a number of policy measures to compensate socially vulnerable and politically influential groups.

The Netherlands. In the Netherlands a waste water levy was introduced already in 1964 (Andersen 1994). By the mid-1980s, there were six sector specific environmental acts which allowed for 15 different levy systems to be created—although only seven were implemented and used to finance specific environmental protection measures (VROM, 1992; Barde, 1999, 34). Dutch policy-makers incrementally adopted an ever wider range of sectoral levies and charges (Vermeend and van der Vaart, 1998). The high administrative cost, lack of transparency and the desire to have an integrated tax system for financing environmental policy expenditures, created the impetus for change in the late 1980s when the government switched from earmarked charges and levies to a strategy of general eco-taxes (interviews in 2000). Between 1988, the year when the General Environmental Provision Act led to a simplification of environmental charges, and 1998, the earmarked environmental charges were replaced by a series of taxes (Barde, 1999, 34). According to one OECD study '[b]etween 1971 and 1998, the Dutch system of environmental taxes and charges gradually evolved from being essentially a means of financing environmental protection programmes to consisting of allocated ecotaxes' (Barde, 1999, 34). In 2001, national eco-taxes made up approximately 3.5% (or 12.5% if fuel taxes are included) of all tax revenues (Snel, 2000). The revenue generated by eco-taxes on small energy consumers is to revert to households in the form of reductions on income tax and/or social security contributions (Barde, 1999, 34). The move towards general eco-taxes therefore took place within a wider national tax reform.

Austria. Austria has used eco-taxes mainly for curbing emissions from transport which are seen as a major threat to the environment in general and the Alps in particular. Other important examples can be found in the energy and waste sectors. In the 1990s proposals for a national eco-tax reform were championed by the Green party, the unions and environmental NGOs. However, they failed to receive the support from the Social Democratic—Conservative (SPÖ/ÖVP) coalition government and were fiercely opposed by industry. The new Conservative-Right wing coalition government has ruled out the adoption of a national eco-tax. Instead it has increasingly warmed to the idea of adopting voluntary agreements and tradable permits in order to achieve Austria's Kyoto climate change commitments (interviews in 2000).

Britain. For many years Britain was slow to make use of eco-taxes on the domestic level and outrightly opposed to eco-taxes on the EU level on sovereignty grounds. Since the 1990s the picture has changed considerably as regards the adoption of national eco-taxes. The fuel escalator, which gradually raises the cost for petrol and diesel fuel, was first introduced by a Conservative government in the 1990s. It has been kept in place by a Labour government which has made wider use of eco-taxes (compared to its predecessor) since it came to power in 1998. However, massive protests against rising fuel prices forced the government to make concessions. In Britain eco-

taxes have also been introduced in the energy sector (e.g. climate change levy and sulphur dioxide taxes) and waste sector (e.g. landfill tax).

The EU. In 1992 the Commission put forward a proposal for an EU-wide carbon dioxide/energy tax. At a time of high public environmental awareness it was championed by the Environmental Commissioner, Ripa di Meana, as a major plank in the EU's Rio Earth summit strategy. However, the proposal was vetoed by Britain (Zito, 2000, Jordan, 2000, Wurzel, 1996). In 1997 the Commission issued a Communication on environmental taxes and charges in the Single Market (CEC, 1997). It was followed up by a proposal for a directive on the taxation of energy products which stipulated minimum tax rates and proposed regular increases between 1998-2002 (Barde, 1999, 45). The Communication stated that '[t]he use of environmental taxes and charges is rapidly increasing in the member states' and expressed its support for 'this evolution, as it opens up the scope for more cost-effective environmental policy' (CEC, 1997, 20).

The EU has considerable powers under the EC Treaty's competition law provisions to vet national eco-taxes while ensuring that they do not discriminate against foreign competitors. The German government postponed the introduction of its eco-tax reform by three months after Commission officials had raised objections. The Commission has still not abandoned plans for EU-wide eco-taxes *(Environment Watch: Europe,* 2 February 2001, 11-12). However, the unanimity requirement is likely to rule out the adoption eco-taxes on the EU level for the time being. This is one reason why other types of NEPIs (such as voluntary agreements and especially tradable permits) have become more attractive policy tools for the Commission.

TRADABLE PERMITS

The US was the first country to experiment with tradable permits on the domestic level (OECD, 1999). In Europe the debate was initially limited to academic circles which followed closely the US developments (interviews in 2001). In the 1990s, the EU and many of its member states favoured the use of eco-taxes to combat climate change, the United States instead fought for emission trading as one possible option for cutting greenhouse gases (interviews in 2001). Now the Kyoto protocol is driving the development of tradable permit schemes in Europe. The Netherlands and Britain were the first to appreciate the potential benefits of this NEPI. Both countries have adopted national permit schemes in order to gain domestic experience before EU and international emission trading systems start. Realising that some system of permitting will be established, transnational companies (such as BP and Shell) have begun to develop in-house permitting systems, even in countries where governments have been slow to act.

Germany. Efforts to set up a national emission trading scheme in Germany were triggered by the realisation that 'the EU's emission trading system will soon be a reality and cannot otherwise be influenced' (interview with official in 2001). The German government, which had initiated three half-hearted unsuccessful attempts to launch tradable permits schemes during the 1990s, had to overcome considerable industry resistance (from the chemical industry in particular) before setting up a working group on tradable permits. It is made up of various stakeholders and met for the first time in December 2000. The chemical industry argued that there is no need for the adoption of tradable permits as a new policy instrument since voluntary agreements had worked well on the domestic level. The German government was able to use the Commission's proposal for a directive on tradable permits, which was published in late 2001, as a lever to gain industry co-operation (CEC, 2000, 2001). However, in early 2002, the chemical industry walked out of the working group.

The Netherlands. The Netherlands has made use of tradable permits for milk quotas since 1983 (Ministerie van Economische Zaken, 1999). Plans by the Dutch government include a tradable permits scheme to reduce CO2 and NOx emissions (interviews 2000). It would therefore be wrong to conclude that the Kyoto protocol has led to the (involuntary) policy transfer of tradable permits. Rather, Dutch policy makers have studied closely the US experience and European debate while drawing lessons from past domestic experience in other sectors. Similarly the EU Commission has argued that 'quotas for Ozone Depleting Substances under the Montreal Protocol, the fish catch quotas under the Common Fisheries Policy, and the milk quotas under the Common Agriculture Policy are all practical examples of allowances with some degree of transferability' (CEC, 2000, 8).

Austria. Austria has been slowest in innovating with this relatively new type of NEPI. In Austria there are only academic studies on tradable permits. However, in 2000, Austria adopted plans for a tradable permits scheme for electricity produced by small hydro power stations. Its initiation has been facilitated by the liberalisation of the domestic energy market that in turn has largely been driven by EU legislation. One EU

official interviewed (2001) explained the Austrian situation as follows: 'The small member states wait for a European solution. They either do not have the capacity or want to avoid duplicating what is being done on the EU level'. However, this statement does not apply to the Dutch example.

Britain. Britain has also made use of tradable permits for milk quotas. Attempts to initiate tradable permits for sulphur dioxide emissions failed (Pearce et al., 2000, 81-83). In June 1999, some 40 companies and government officials formed the Emissions Trading Group to establish a tradable permits scheme for climate change gases. The national emission trading system which went ahead in 2002 is the earliest nation-wide tradable permits systems within the EU. Britain's first mover strategy can be explained by the traditional emphasis on cost-effectiveness in domestic environmental policy. However, important economic interests in such a trading system can also be found in the City of London.

The EU. The Commission used the Kyoto protocol's tradable permit provisions as a means of putting under pressure member states, some of whom were reluctant to consider tradable permits. In 2000, the Commission set up tradable permit working groups. Member state and Commission officials discussed possible schemes and the most important sticking points (such as caps and auctions). On the basis of these discussions, the Commission put forward a proposal for a directive on tradable permits in late 2001 (CEC, 2000, 2001).

In Europe tradable permits are being deployed alongside other NEPIs as well as traditional regulation. The idea of different (national) policy instrument mixes figured prominently in the discussions of the tradable permit working groups and the hearings which the Commission organised for member states and stakeholders in Autumn 2001. However, '[s]ystems *combining* eco-taxes and trading permits, that is, both a price approach and a quantity approach, still remain to be tested.' (Barde, 1999, 46).

Conclusions

COUNTRY FINDINGS AND COMPARISONS

The empirical findings have shown that different jurisdictions have taken the lead on different types of NEPIs. Germany has used the highest number of voluntary agreements while Britain is a pioneer with regard to tradable permits. Overall, the Netherlands has emerged as relatively advanced as regards the willingness to experiment with a broad range of NEPIs and mixing them with traditional policy instruments. However, the use of voluntary agreements in the Netherlands has shown that one and the same type of policy instrument may undergo significant changes over time (for example, from legally non-binding voluntary agreements to formalised enforceable covenants which differ only slightly from traditional environmental regulation).

Germany has made wide use of traditional environmental regulation and voluntary agreements which are often adopted in the 'shadow of the law'. Like the Netherlands, Germany experimented early with limited eco-taxes although it was only in 1999 when the German government introduced an eco-tax. Germany, compared to the Netherlands and Britain, has been a latecomer as regards tradable permits. Early attempts to create pilot projects met with industry resistance, but the pressure of the EU and international discussions has pushed the issue back on to the national agenda.

Austria has been relatively slow to experiment with NEPIs and has failed to adopt a broader mix of policy instruments. It has relied mainly on traditional environmental regulation (and subsidies) while also making moderate use of voluntary agreements and eco-taxes.

Britain has only recently become an innovator with regard to the use of NEPIs although it has made little use of non-binding voluntary agreements. Britain's use of eco-taxes has changed considerably over time and even took the lead on certain issues such as the fuel taxation. It also has shown a considerable degree of readiness to experiment with tradable permits and made great efforts to influence the EU discussions by providing a national tradable permits system as a model. The direct EU creation of NEPIs has been limited. The EU has had a greater role in promoting convergence although it has managed to encourage the adoption of a small number of voluntary agreements at the European level.

THEORETICAL CONSIDERATIONS

As regards voluntary agreements, more variation occurred than would be expected using a pure 'settings dominant' approach. This is especially true for the Austrian case. The EU, on the other hand, fits well this theoretical perspective. It has so far been unable to make widespread use of voluntary agreements largely due to institutional constraints. In the Netherlands, covenants have fitted well with both the traditional policy style involving close private and public co-ordination, but also with the aim of modernising environmental policy by emphasising long

term commitments and self-regulation. Likewise in Germany, voluntary agreements fitted the consensual style and close interaction between industry and the government. The initial scepticism of the new Red-Green coalition government was not able to stem the increased use of voluntary agreements in Germany. Britain, with its more pluralist state-societal organisation and a traditional policy style based on informal consultation has been less active with regard to voluntary agreements which have taken a much looser form than the legally binding Dutch covenants. While the British case can be explained well from a settings dominant perspective, Austria's low use of voluntary agreements does not seem to fit easily this perspective.

The use of eco-taxes has been more constrained by national obstacles within the four countries studied and in particular within the EU where taxes require unanimity voting. The EU has been prevented from moving beyond the proposal stage due to sovereignty concerns. The Netherlands, Germany and, to a lesser degree, Austria have adopted eco-taxes since the 1970s. However, initially they were limited to specific issues and policy problems. It is only from the 1990s onwards that eco-tax reforms have taken into account broader policy goals and were linked to job creation. All of the member states which adopted eco-taxes granted exemptions for industrial high energy users, showing that they were mindful of possible effects on industry competitiveness. The desire not to penalise Austrian industry, which is already faced with a relatively high level of traditional environmental regulation helps to explain the absence of a national eco-tax reform.

The dominance of lawyers and technically trained officials in Germany and Austria within the environmental administration is seen as an important explanatory variable for the initial reluctance of these two member states to adopt tradable permits, especially when compared to Britain and the Netherlands (interviews, 2000).

Ideas dominant perspective. From the ideas perspective, the shift towards a wider range of policy instruments could be due to advocacy coalitions pressing for the adoption of NEPIs. The EU, OECD and UN all have provided transnational platforms for those advocating NEPIs use. A recent example is the way in which European advocates initially 'borrowed' the idea of tradable permits from the US and then used them to develop European pilot projects. In doing this, some member states (such as the Netherlands) have been able to draw on domestic experience in other sectors while other member states have gone through extensive consultation processes (e.g. Germany) in order to take account national peculiarities. Tradable permits schemes do not therefore constitute a copy cat of the US model but take into account European context variables.

It is possible to identify opposing advocacy coalitions whose core beliefs and have changed little as regards the adoption of a particular policy instrument. For example, unions and environmental NGOs have remained largely sceptical about the wide use of voluntary agreements while advocating eco-taxes and traditional environmental regulation. Industry representatives and Economics (and Finance) Ministry officials often take a different perspective. However, the ideas dominant perspective largely fails to provide a satisfactory explanation for differences in national policy instrument mixes.

Chaos dominant perspective. The adoption of a new type of NEPI (such as tradable permits) and different instrument mixes at different speeds in various jurisdictions fits the chaos dominant perspective. The UN climate change negotiations have forced both the national and EU agendas from a limited experimentation by a few pioneer states (e.g. the Netherlands and Britain) and unsuccessful efforts (e.g. Germany) to a more concentrated focus upon tradable permits. The German eco-tax reform is another a good example. It was adopted within only a few months following the somewhat unexpected inauguration of a Red-Green coalition government at a time when political and public support for such a tax was already waning.

Settings dominant perspective. No two governments have used the same NEPI tool in exactly the same manner. For example, the countries studied do not define voluntary agreements in the same way. Different jurisdictions have responded to new ideas about NEPIs in different ways because of national (or supranational) path-dependencies. States (and the EU) usually alter NEPIs transferred from elsewhere in order to ensure that they fit in with wider national (and supranational) institutional features and regulatory styles. This adaptation may occur during the implementation phase as was shown with regard to eco-taxes following protests in several countries. NEPI innovation is therefore likely to take place only gradually and unevenly. Policy convergence during the adoption process may give way to divergence during implementation which explains why convergence and divergence may occur simultaneously. Our findings have shown that significant instrument change has occurred over time. However, they have been used differently in various jurisdictions.

NEPIs as a case of policy transfer? Policy makers are

often keen to learn more about foreign experience with regard to NEPIs but tend to be sceptical about a full-scale transfer from one jurisdiction to another. Instead they often stress the importance of domestic peculiarities and the need for 'learning by doing' (interviews in 2000). There are important institutional barriers which make difficult the full scale transfer of, for example, voluntary agreements and lead to differences during the implementation stage. Moreover, the use, form and contents of different types of NEPIs, as well as the overall policy instrument mix, evolve over time. The use of voluntary agreements in the Netherlands provides a good example of this. Initially, Dutch voluntary agreements showed little formalisation, focused on narrow issues and were not legally enforceable. In the 1990s they became more standardised and developed into legally binding covenants which often addressed a range of sectoral issues while putting forward long term commitments (Mol et al., 2000). Voluntary agreements in Britain have also become more formalised and transparent although their number has remained low. European tradable permits schemes were initially strongly influenced by the US experience. However, the recent pilot schemes set up in various member states have taken into account national peculiarities and the European experience.

	'Ideas' dominant	'Settings' dominant	'Chaos' dominant
Themes	Instrument choice driven by competing ideas	National institutions shape the search process and constrain implementation	Instruments look for policies; policies look for instruments
Role of instruments	Mainly instrumental: implement dominant ideas	Instruments are embedded in institutional contexts/settings	Search process is ad hoc (what appears to work) rather than instrumentally rational/intellectually coherent
Key agents of PT	Epistemic communities, advocacy coalitions, experts and scientists	National (or supranational) actors within the confines of existing structures	Pluralistic mix of actors
Search process	Rational and goal directed	Path dependency (to achieve 'goodness of fit'). 'revolutionary policy learning' after catastrophe/failure	Chaotic and highly pluralistic
Impact of Lesson drawing	Generally large	Small if goodness of fit poor (the 'stickiness of adaptation); higher if the fit is better	Unclear a priori: context dependent?
What is transferred?	Ideas, paradigms, policy goals	Mainly theories of stability rather than change: but crises?	Not clear a priori: possibly ideas, policy goals or instruments
Main advocates	Sabatier, Hall, Majone, Haas	Heclo, March and Olsen, Wolman, Andersen, Howlett, Knill and Lenschow	Cohen et al., Kingdon

Table 1: Theorising the transfer of instruments and policies within the European Union.

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Emissions Trading in Germany: Politics Between Pressures to Act, Enforcement for Harmonisation and First Mover Advantage

*by Sascha Lafeld**

The transfer of environmental policy innovations usually arises from dynamic interactions incorporated in a set of complex and interrelated conditions. This is also true for the climate-policy instrument of emissions trading which has been widely discussed since Kyoto 1997. The Kyoto Protocol imposes mandatory greenhouse gas (GHG) emissions reduction obligations on 38 developed countries know as Annex B countries. Among other things, the protocol provides the possibility for the signatories of emissions trading as a flexible means to comply with the reduction obligations. Emissions trading is a promising policy instrument since it offers economic efficiency and the achievement of ecological objectives at the same time. Emissions trading puts a price on the use of the environment and encourages to systematically search for cost-effective reduction opportunities.

The political negotiations concerning rules and framework of the trading scheme are embedded in the area of international, European, and national politics. Following the current timeframe on the international level the implementation of emissions trading is scheduled for 2008. The European Union intends to establish a Europe-wide emissions trading system until 2005. Besides already existing systems in the US, also some individual European countries have started to set up domestic trading schemes. The political negotiation process has also started in Germany in 2000. In October, the "German Group on Emissions Trading to Combat the Greenhouse Effect" under the chairmanship of the German Federal Environment Ministry has been founded. With the participation of all relevant stakeholders the group shall work out the rules for a domestic trading scheme. Certainly, the negotiating and planning processes regarding the implementation of emissions trading spreads rapidly on a world-wide scale and a transfer of ideas among the active countries is to be noticed.

The ability of political ideas, structures, and regulatory patterns to transfer across borders has existed for centuries, but advances in telecommunications and computers have made this process much easier (Drezner 2001, 53-78). In political science two main streams have been developed over the last decade to explain this phenomenon—firstly, the concept of policy diffusion, and secondly, the concept of policy transfer. Textually, both conceptions focus on similar phenomena. Nevertheless, the concept of policy transfer by David P. Dolowitz and David Marsh is currently further developed (Dolowitz and Marsh 2000, 5-24). In particular, this approach offers the advantage of focussing on the continuum between voluntary and coercive policy transfer that is crucial for the context of emissions trading.

The article at hand starts with an overview on the features and problems of the policy process concerning emissions trading in general. Based on this, the importance of the interrelated levels of international, European, and domestic emissions trading policies is further examined. For this analysis the concept of policy transfer by Dolowitz and Marsh is deployed (Part A). The following sections deal successively with the developments on the international, European, and domestic levels (Denmark, UK). Thus, the context of the German policy process concerning emissions trading becomes evident (Part B). The current national policy interactions aiming at working out the rules for a domestic emissions trading scheme in Germany are investigated in the third part of this article. In how far the developments on the international, European, and national levels have determined and/or influenced the German process is investigated (Part C).

Fundamentals and conceptual framework

Basic design features for emissions trading schemes

Although its ratification is yet to come, the Kyoto Protocol from 1997 is the most important driver for emissions trading (UNFCC 1997). The Protocol includes several forms of emission transfers through its flexible mechanisms (International Emissions Trading, Joint Implementation, Clean Development Mechanism). However, the challenges for politicians in designing and implementing an emissions trading scheme are complex. In the long term, efficient policies and measures ought to be found for all industrial sectors and all greenhouse gases—political acceptance

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has to be obtained on international, European, and national levels. But how to convince the most important potential participants of emissions trading—the business community—to join a trading scheme? This can only be achieved if the rules and standards of the trading system are as transparent and cost-efficient as possible. The basic design problems of a trading scheme include the following:

Operating figures	- Voluntary or mandatory system? - Geographical borderline of the scheme?
Integration	- How to integrate an emissions trading scheme in the already existing legislation?
Participants	- Who participates?
Certificate Features	- What currency is traded? (e.g. 1t CO_2) - Is banking and/or borrowing allowed?
Allocation of the certificates	- Grandfathering and/or auction? - How to deal with new market entries?
Trade	How is the trading organised? (broker/stock market)
Technical processing	- How to quantify emissions? (direct/indirect emissions) - What (emissions-) data has to be reported until when to whom?
Monitoring	- Who monitors the companies and to which extend?
Sanctions/ liability	- What are the sanction mechanisms? - Who is liable for the validity of the certificates? (seller or buyer)
Combination with IET/JI/CDM	- Are JI and CDM projects accepted? - For domestic schemes: are international transactions allowed?

Table 1: Basic design problems for emissions trading schemes

Current experiences show the advantages of considering the input of all important stakeholders when designing a trading scheme in order to prevent reluctance right from the start (Lafeld and Wiggering 2002). In the stakeholder's perspective it is also evident that domestic trading schemes are just a first step. In the long-term only an international scheme offers the use of widely varying emission abatement costs and therefore the highest economic efficiency.

EMISSIONS TRADING IN THE INTERRELATED CONTEXT OF INTERNATIONAL, EUROPEAN, AND NATIONAL POLITICS

While investigating emissions trading, it is necessary to simultaneously focus on the international, European, and national policy level to understand their interrelations.

International level: The transnational diffusion of emissions trading is primarily fostered by the decisions made at the Conferences of the Parties (COP) of the United Nations Framework Convention on Climate Change. Most important in this respect is the Kyoto Protocol as adopted at COP3. This international environmental regime builds the framework within which transnational policy transfer is conducted. Most importantly, the Kyoto Protocol generates pressures for the individual countries to act.

European level: The dynamic developments on the European level have been coined through the Green Paper on Emissions Trading from 2000 and the draft of an Emissions Trading Directive by the European Commission from 2001. For the EU member countries the decisions made in Brussels are of utmost importance since they create pressure to harmonise the efforts within the Union. They also provide incentives for the individual countries to become more active on a domestic level in order to gain experiences in the field of emissions trading. These experiences could be used in a second step to influence the negotiations on the European level.

National level: In several European and non-European countries domestic emissions trading schemes have already been established. The United States have been the precursor in emissions trading by setting up their United States Acid Rain Program in 1990 in which, among others, sulphur dioxide is traded. Within Europe, Denmark and the UK have already started domestic trading schemes. These domestic schemes generate pressures for other countries to follow in order to prevent falling behind developments that might become standards on the international or European level in the future.

This highly dynamic and interrelated context has to be further examined since it builds the frame for the German activities and efforts in establishing a domestic trading scheme. The analysis of the German activities is based on the concept of policy transfer by Dolowitz and Marsh.

Emissions Trading and policy transfer—the concept by Dolowitz and Marsh. Looking at the current policy efforts concerning emissions trading on a world-wide scale, a policy transfer among several countries can be observed. This phenomenon cannot be described only through comparable political systems or policy styles in the according countries. Even the fact of similar problem pressure owing to the global character of climate change does not suffice to explain the increasing policy convergence adequately (Kern/-Jörgens and Jänicke 1999, 2). Considering this, Dolowitz and Marsh have developed a set of questions along which the phenomenon of policy transfer can be investigated (Dolowitz and Marsh 2000, 8-9):

Why do actors engage in policy transfer? (continuum from voluntary to coercive). Who are the key actors involved in the policy transfer process? What is transferred? From where are policy lessons drawn? What are the different degrees of transfer? (e.g. copying, emulation, mixtures, inspiration). What restricts or facilitates the policy transfer process? How is the process of policy transfer related to policy 'success' or policy 'failure'? Since the negotiations in Germany are still in the stage of policy formulation, the questions three to seven cannot be (sufficiently) answered. Hence, the following analysis focuses in particular on the questions one and two. Answering 'how?' and 'why?' policy transfer occurs, conclusions could be drawn for future policy transfer processes.

Emissions Trading within the context of international, European, and domestic developments

INTERNATIONAL LEVEL: KYOTO 1997—BONN 2001—MARRAKECH 2001

The Kyoto Protocol from 1997 paved the way for an international strategy based on economic instruments to encounter the climate change problem. Although the protocol contains several severe shortcomings it is seen as a milestone in the history of climate protection (Oberthür and Ott 2000, 347). The basic dynamics of the protocol are determined by two fundamental regulations: On the one hand, the protocol imposes mandatory GHG emission reduction obligations on 38 industrialised countries and countries in transition. The emissions reduction target for these countries (Annex B countries) as defined in Kyoto, in aggregate, is 5,2% below 1990 levels in 2008 to 2012. This target has been renegotiated in Bonn in July 2001 and brought down to an estimated 1,8% (Natsource 2001). The EU members are subsumed in a 'bubble' which is obliged to -8% carbon dioxide emissions in the same time frame. Within this 'bubble' Germany has announced to reduce its carbon dioxide emissions by 21%.

On the other hand, the Protocol provides the opportunity of emissions trading. Emissions trading is a collective term for the flexible mechanisms manifested in the protocol, namely International Emissions Trading (IET), Joint Implementation (JI), and Clean Development Mechanism (CDM). The current state of political negotiations indicates that these flexible mechanisms will be used on an international level starting from 2008 and within the EU from 2005 onwards. The mechanism are based on the principle that a given emission reduction can be achieved where reduction costs are lowest, without altering the benefit for the global climate.

Under International Emissions Trading, Annex B Parties can trade part of their emissions budget under the Kyoto Protocol known as Assigned Amount Units (AAUs), which have to be allocated to the participants in a yet to be defined modus (The Allen Consulting Group 2000). For example, the Russian Federation could sell part of its assigned amount to Japan. The trade system applied is called 'cap-and-trade'. 'Cap' signifies the assigned amount of permitted emissions. The legislator implements emission reductions by decreasing the amount of certificates from year to year. This provides incentives for companies to invest in emission abatement technologies (Bayer and Cansier 1999 and Janssen 2000).

Under Joint Implementation, an Annex B country invests in a project in another industrialised country and receives credits for achieved emission reductions—the so-called Emissions Reduction Units (ERUs). The ERUs can be used toward compliance with the Kyoto target. For example, an investment by the Dutch Government enabling a district heating in the Czech Republic to increase energy efficiency and switch from coal to gas, could qualify as a JI project.

Under the Clean Development Mechanism, an Annex B Party invests in a project in a developing country and, again, obtains a credit for achieved emission reductions—the so called Certified Emissions Reduction Unit (CERs). For example, an investment by a German company to improve the efficiency of a steel plant in Thailand could qualify as a CDM project.

The market system used for JI and CDM projects is called 'baseline-and-credit'. The 'baseline' signifies the reference value for the level of emission in the project's host-country without the project financed by an Annex B country. Dependent on this baseline, the amount of credits issued for the investing country is defined. Emission reduction certificates are only assigned if the project emissions are below the agreed baseline.

There are various problems connected with the implementation of the Kyoto Protocol. The Protocol will only enter into force when 55 parties to the United Nations Framework Convention on Climate Change from 1992 have ratified it which account for at least 55% of carbon dioxide emissions of industrialised countries. Since the US are responsible for some 25% of world emissions and are not willing to ratify the protocol, a vast proportion of remaining countries must ratify the protocol for it to take effect. So far, only 37 countries have ratified the Kyoto Protocol—just one of which (Romania) is in Annex

B. In addition, not only the US objection of the Kyoto Protocol is a heavy burden for further negotiations—also the vague legal framework for trading activities hinder companies to become involved in emissions trading on a world-wide scale.

Several pilot projects and trading simulations attempt to provide indicators regarding how these rules could be defined in a meaningful way. There already exists a variety of non-regulated trading markets where companies experiment on a voluntary basis with emissions trading. Most prominent example in this respect is the 'GHG Emissions Trading Simulation' (GETS2) under the chairmanship of the Union of the Electricity Industry in Europe in 2000 (Union of the Electricity Industry/Euronext and PriceWaterhouseCoopers 2000). Also company internal trading regimes are established, e.g. at BP (Großcurth 2000, 12). Further input for the international negotiations are coming from the experiences with the so-called carbon funds whose portfolio is composed of JI and CDM projects. Since January 2000 six carbon funds have been launched with more than one billion US $ invested.

The Kyoto Protocol determines the framework of the European and domestic negotiations concerning emissions trading. However, the broad framework of the protocol has been amended dramatically at COP6 Part II in Bonn in July 2001. Not only the amount of obligatory world-wide emission reductions has been lowered from 5,2% to an estimated 1,8%, but also the rules concerning the means to obtain the reductions have changed. The Kyoto Protocol determines that a minimum of 50% of the national emission reduction target has to be achieved through domestic actions. In Bonn, this agreement has been cancelled without a substitution. From an ecolocigal perspective, this could open the opportunity especially for richer countries to buy large amounts of the so-called 'Hot-Air' certificates and thus to accomplish with the Kyoto target without a real emission reduction. From an economic perspective, this decision fosters the meaning of emissions trading and will give rise to the world-wide dynamics in emissions trading negotiations. The international developments have caused a highly dynamic political process on the European level regarding emissions trading.

EUROPEAN LEVEL: EMISSIONS TRADING AND THE EUROPEAN UNION

Europe-wide interest in emissions trading began in March 2000 when the European Commission issued its Green Paper on Emissions Trading. Here, the Commission announced its intention to have an EU Greenhouse Gas emissions trading regime up and running by 2005 and set out some of its basic design principles (Commission of the European Communities 2000). The call for reactions to the Green Paper yielded almost 100 submissions from various stakeholders and interest groups, the vast majority of these reactions welcoming the introduction of an EU-wide regime (Ströbele/Rengeling and Meyer 2000). In addition to the Green Paper, emissions trading has been one of the key topics in the Commission's multi-stakeholder consultation under the European Climate Change Programme (ECCP). In June 2001 the Commission issued the first results of these meetings (Commission of the European Communities 2001(a)).

In parallel to the ECCP discussions, the regulations concerning Joint Implementation are on the Commission's agenda. Funded by the Commission's 'Fifth Framework Programme' and the project partners, JOINT is an 18 month project which began in March 2000. It covers 14 European countries, including five EU accession states of Central and Eastern Europe. Industry, government, and energy/environment specialists have been brought together to work both at a country level and also at a European level to cover all political, technical, scientific, and administrative aspects of JI (http://joint.energyprojects.net/, 28.08.01).

The results of the various studies and consultations have been summarised by the Commission in form of a 'Proposal for a Directive of the European Parliament and the Council Establishing a Framework for GHG Emissions Trading Within the EU' (Commission of the European Communities 2001b). The scheme is issued to start in 2005 and shall cover approximately 46% of EU carbon dioxide emissions comprising some 4,000 to 5,000 installations. Obviously, the EU is decidedly preparing the introduction of an EU-wide emissions trading regime. But also in some EU member-states dynamic negotiations can be observed. This becomes evident through the formation of domestic Emissions Trading Groups in Norway, France, Ireland, Denmark, UK, Germany, and The Netherlands. Denmark and the UK have already established domestic trading regimes starting in 2001 and 2002 respectively.

TRANSNATIONAL POLICY TRANSFER: THE PIONEERS DENMARK AND THE UK

Starting in January 2001, Denmark has established a carbon dioxide emissions trading scheme applied to its electricity generation sector. With this system, Denmark became the pioneer in the field of domestic emissions trading within Europe. The Danish scheme uses a cap-and-trade approach with a coverage of approximately 40% of the entire Danish carbon diox-

ide emissions (Hasselknippe and Høibye 2001). The government aims to achieve a gradual reduction in carbon dioxide of about 13% before the end of 2003 (Betz et al. 2001, 6). It is intended to extend the scheme's scope in the future to the Kyoto mechanisms and an international emissions trading scheme.

Issued in 2001, the UK's trading scheme for greenhouse gas emissions has been strongly criticised for its complexity. In June 1999, the UK Emissions Trading Group (ETG) was formed to develop a trading market for greenhouse gases in the UK. The ETG comprises some 100 leading companies, representatives of the government, industry associations, NGOs, and scientific institutes. The British Government explicitly welcomed the Group's work in order to prepare the British economy for EU-wide and international emissions trading regimes. The current governmental Climate Change Programme regards emissions trading, together with the *Climate Change Levy* (CCL) and the Climate Change Agreements (CCA) of the energy-intensive industries, as a means of long-term climate protection. During the last one and a half years the ETG has published several documents culminating in the final proposal for a domestic emissions trading scheme in August 2001. The trades are scheduled to start in 2002 (Department of the Environment, Transport and the Regions 2000).

Participating in the UK system is voluntary, but the government has created several economic incentives for companies to join. For those subject to the CLL, the incentive comes in form of an 80% CCL-discount in return for adoption of a government-approved energy efficiency target. For those not subject to the CCL, the government has offered an economic incentive. Eligible companies will be able to these incentives in return for adopting an absolute emissions target lasting five years. The British regime seeks to ensure that any firms taking early action by participating in the UK scheme are not disadvantaged by the rules of an international trading scheme (Mullins 2001).

Until international emissions trading under the Kyoto Protocol becomes operational in 2008, any issues involved in linking trading systems must be resolved multi-laterally by the organisations responsible for these systems or through intermediaries. The experience gained from linking domestic systems during this period may be pertinent to the practical operation of international emissions trading. The European Commission has already accomplished some work on this issue. The working group "*European Programmes for Political Concepts and Measures to Reduce GHG Emissions*" has debated on the harmonisation of domestic trading regimes on the EU-level (Commission of the European Communities 2001(c)). There is an overall agreement that crucial parameters of the schemes have to be co-ordinated, e.g. the method of allocation of the certificates and their registration. Various national interests and specific domestic legislation need to be harmonised and balanced. A comparison of the Danish and British system shows that Denmark has chosen a 'minimum-approach'—the trading regime applies only to the energy sector and will be upgraded with increasing experiences. Contrary to this, the UK has decided to include several industry sectors right from the start. The question of compatibility of trading systems will be one of the key concerns of future negotiations. Also within the German discussion this issue is of utmost importance.

Emissions Trading in Germany

THE NATIONAL CAPACITY FOR ACTION IN ENVIRONMENTAL POLICY

Since 1990, Germany has a comprehensive Climate Protection Programme encompassing the most relevant areas (private households, consumers, industry, transport, waste management). This programme has been continually reviewed and updated. With the adoption of the new Climate Change Protection Programme by the Social Democrat/Green coalition government in October 2000 the cabinet approved the implementation of 60 new measures (Schafhausen 2001). Among other things the government aims in its updated programme at reducing carbon dioxide emissions by 25% below 1990 levels until 2005 (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit 2000). Germany now employs several co-ordinated sets of measures. There are regulatory requirements and economic tools such as the Ecological Tax Reform, the Renewable Energies Act (*Erneuerbare-Energien-Gesetz*), the Combined Heat and Power Generation Act, the 100,000 Solar Roofs Programme, and the carbon dioxide Reduction Programme of the Bank for Reconstruction (KfW) (Umweltbundesamt 2001a, 56). The "Agreement Between the German Government and German Industry and Trade on Precautionary Action on Climate Change" of 9 November 2000 is the core tool in the field of German industry. In June 2001, representatives of German trade and industry signed another declaration of voluntary commitment to enhance their use of co-generation. The German industry is now committed to make efforts to reduce greenhouse gas emissions by 28% by 2005 and 35% by the year 2012 (Bundesministerium für Umwelt, Naturschutz

und Reaktorsicherheit 2000b).

Between 1990 and 2000, Germany reduced its carbon dioxide emissions by 15% and its greenhouse gas emissions by 18%. Consequently, another approximately 50-70 millions tons of CO_2 have to be reduced to meet the Kyoto target. The energy industry is obliged to reduce 20-25 million tons, private households ought to decrease their emissions by 18-25 million tons, and the transport sector has been committed to a reduction of 15-20 millions tons. In its annual report from 2000, the Federal Environment Agency points out that the Kyoto target will not be met without supplementary measures (Umweltbundesamt 2001a, 56). Also the German Council of Environmental Advisors (SRU) assumes that the climate protection target cannot be reached with the current methods. The Advisory Council explicitly recommends to integrate the flexible mechanisms into the German climate protection policies (Der Rat von Sachverständigen für Umweltfragen 2000, 341).

THE GERMAN EMISSIONS TRADING GROUP: ACTORS, CAPACITY, AND SIGNIFICATION

Emissions trading in Germany has gone through a long 'shadowy existence'. This has fundamentally changed within the last two years. Currently, the position of the Federal Government of Germany concerning the use of trading GHG emissions is generally positive. In October 2000, the 'German Group on Emissions Trading to Combat the Greenhouse Effect' has been founded. Under the chairmanship of the Federal Environment Ministry a wide variety of stakeholders is striving to work out the frame for a German domestic emissions trading scheme. The group is composed of representatives coming from the government, industries, trade associations, and environmental organisations. In September 2001, a discussion paper has been issued that reflects the Group's preliminary results and recommendations (Arbeitsgruppe Emissionshandel zur Bekämpfung des Treibhauseffektes 2001).[86]

The existence of the Emissions Trading Group shows that Germany intends to avoid the eventually high costs for late runners in emissions trading. Héritier's assumption of increasing 'regulatory competition' at the European level gains importance in this respect (Héritier 1994). Regulatory innovations by pioneering countries often set international standards which, in turn, put pressure on other countries to act.

However, considering that the German Emissions Trading Group has been founded more then a year ago, the actual results of the negotiations are rather unsatisfying. Most importantly, this could be explained through the heterogeneous interests within the group. The question discussed most in the negotiations is how to integrate a domestic trading scheme in the already existing legislation. Especially the possible linkage of such a system with the Eco-Tax and the voluntary commitment by the industries are controversially discussed. This problem shows the current limitations of the national capacity for action. Furthermore, the group's underlying question has not been answered yet: Do the group members really want to set up a domestic emissions trading scheme? Among the group members it has been agreed upon tackling this question once the general framework conditions for such a system are settled.

Outside Germany, the willingness to develop and implement emissions trading concepts seems to be higher then in Germany. A reason for this might be found in the far-reaching climate protection policy measures which already exist and are more advanced compared to other countries. Nevertheless, the German Emissions Trading Group intends to develop a concrete and detailed position regarding how a domestic emissions trading scheme and/or a pilot project could be set up by the end of 2001. The latest approach of the European Commission leaves no doubts that there will be a Europe-wide emissions trading scheme by 2005. Germany cannot exclude itself from this process and aims instead at becoming constructively involved in the debate to avoid falling behind the international developments.

Conclusions

SIGNIFICANCE OF THE INTERNATIONAL LEVEL

The agreements reached in Bonn and in Marrakech in 2001 paved the way for the ratification of the Kyoto Protocol and accelerated the dynamics of global discussions regarding emissions trading. In particular, the advocators of emissions trading are encouraged by the abandonment of the Kyoto Protocol article which obliged the countries to reduce 50% of emissions within their own country. On the one hand, Germany is waiting for binding specifications coming from the international level. On the other hand,

[86] The group suggests to carry out a pilot phase for an EU-wide emissions trading systems which should be limited to a period of three years. The initial allocation of the emission allowances should be free of charge (grandfathering); however, there should also be the possibility to allocate a certain share via an auction procedure. Early action should be taken into account appropriately. In principle all six Kyoto gases should be included in an emissions trading system. A large number of participants is necessary to make the market economically efficient. Therefore, emitters as well as intermediaries should be permitted to participate in trading. Once the preconditions have been defined emission credits from projects should be included.

within 2001 it started its activities to gain domestic experiences in order to obtain influence onto the international level.

SIGNIFICANCE OF THE EUROPEAN LEVEL

Currently, the most important developments in emissions trading from the German perspective are those in Brussels. The negotiations on the European level are clearly directed towards starting community-wide emissions trading by 2005. In this respect, the Green Paper on Emissions Trading, the multi-stakeholder consultations, and the just finalised Emissions Trading Directive are evident signs.

Particularly the internal enforcement for harmonisation of policies within the EU is a positive prerequisite for the transfer of emissions trading among member states (Jänicke 2000, 8). The EU will decide on emissions trading according to Art. 175 EEC (majority decision). Therefore, even individual opponents of emissions trading cannot stop its implementation. In this respect, it is vital to prevent contradictions arising between national trading regimes and the Europe-wide scheme. Problems arise out of crucial questions e.g. whether or not the track of voluntary or mandatory participation should be pursued. The latest Directive on Emissions Trading issued by the European Commission favours a system with mandatory participation, whereas the German Emissions Trading Group recommends a voluntary scheme for which attractive incentives have to be provided in order to get participants involved (Commission of the European Communities 2001b). These disagreements are an incentive for Germany to play a more active role in Brussels.

In sum: Germany engages in transfer of ideas regarding emissions trading because of pressures coming from developments on the international and European level. Based on domestic negotiations in the Emissions Trading Group, Germany is becoming more involved on these levels in order to gain influence and avoid adoption costs in the future.

SIGNIFICANCE OF THE PIONEER COUNTRIES

The significance of front-runner countries for international emissions trading transfer is also a crucial factor for the German efforts. Héritier's hypothesis of an 'regulatory competition' at the European level gains validity regarding emissions trading (Héritier 1994). EU member states can defend their own interests more effectively by assuming an active, pioneering role, rather than by adopting a 'wait-and-see' attitude (Kern/Jörgens and Jänicke 1999, 5). Within Europe, this competition started when Denmark and the UK set up their domestic trading schemes as benchmarks for other countries. This was crucial to decrease the reluctance in Germany towards adopting ideas regarding emissions trading and it was also important for the foundation of the German Emissions Trading Group according to the British model.

From the German perspective, the question 'What decisions have been made in neighbouring countries?' is of high importance, since Germany traditionally aspires to the status of environmental policy front-runner or at least not to be counted among the late-comers. Germany is also concerned with getting the 'first-mover-advantage' which can only be gained when collecting experiences in an early stage and which may lead to competitive advantages.

EMISSIONS TRADING IN GERMANY

Generally it can be noted that political negotiations in Germany are rather slow-moving due to the heterogeneous interests within the German Emissions Trading Group. However, the demand for ways to meet the Kyoto target-line grows stronger the more binding rules are defined on the international and European level. Paving the way for the Kyoto Protocol ratification, the decisions made in Bonn and Marrakesh in 2001 clearly support those who favour emissions trading. In Germany, emissions trading is not seen as the only and ideal solution for the climate change problem, but it is considered as one opportunity among others to tackle the problem. The German government understands that on the national level it is necessary to collaborate with all interested and involved stakeholders and investigate how an intergovernmental emissions trading concept should be structured and incorporated into the raft of measures already being practised. The current political process in Germany shows the willingness of those involved to learn from experiences with already existing trading schemes in other countries. Indeed, it is vital to prevent contradictions between national, European, and global levels. Therefore, as a foundation of its work, the German Group on Emissions Trading has examined several existing schemes and uses this knowledge as input for structuring its own domestic scheme.

The national capacities for action in Germany are clearly marked. From a large part of the industries, the 'homework' concerning climate change is regarded as accomplished through the existing voluntary agreement and the Eco-Tax. However, the international developments force even the reluctant participants to get involved with emissions trading. In this regard, it is crucial to think about how to incor-

porate emissions trading into the already existing legislation—the top question on the agenda of the industries is to avoid 'doubled burdens'. Several companies in the German Emissions Trading Group worry about a comprehensive restructuring of climate change policies already implemented. These reservations are considerably slowing down the speed of finding a consensus within the German Emissions Trading Group. However, a neat conjunction of existing legislation and an emissions trading scheme is possible—this has already been proved in the UK (Meinecke and Schrader 2001, 12-13).

In international comparison, Germany's climate change policies as a whole are already advanced. Therefore, one could presume a rather low rate of activity within a domestic emissions trading system. From the German perspective emissions trading becomes interesting when looking at the incorporation of JI and CDM projects. The project based mechanisms offer an enormous potential for German industries to realise cost-efficient climate protection and to meet the Kyoto target line at once.

In the continuum between voluntary and coercive policy transfer, the transfer of ideas and features for a domestic emissions trading framework into Germany is clearly to be classed on the coercive side. As a member of the international climate regime and the EU, Germany cannot elude itself from the developments and decisions on higher levels. For political, economical, and ecological reasons, Germany has to pursue the path of emissions trading to extend its competence and influence on the global negotiating process in this particular field. Furthermore, the British trading scheme offers some interesting solutions regarding the incorporation of emissions trading into existing legislation and could therefore provide some useful recommendations for the German policy makers.

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Governance by Diffusion? Potentials and Restrictions of Environmental Policy Diffusion

by Kerstin Tews and Per-Olof Busch***

Given the growing threat of global environmental change there is a need for a globalisation of environmental policy.[87] However, even when the issue is acknowledged as important and serious by much state and non-state actors common solutions (like international regimes) may fail due to bargaining logic of the international negotiation game. Without ignoring the necessity of this kind of global governance by regime foundation we argue that academic attention has to be widened beyond this perspective and include additional types of global governance, which take place in the run-up to or in the shadow of intergovernmental negotiations.

Our empirical data indicate that global convergence of environmental policy can take place in the absence of a strong international regime, within which states committed themselves to certain policies and which provides strong compliance mechanisms. Supplementary to the perspective that activities of international organisations and trans-national policy entrepreneurs should bring about common global solutions by intergovernmental negotiations, we argue that even the more "softer" activities like the dissemination of problem perceptions, ideas and benchmarking practices may facilitate common solutions by the diffusion of national policy innovations. Nation state's adoptions of policy innovation to approach global problems may be induced by different types of policy competition and learning as a result of economic and political and societal globalisation.

In a first step the article outlines driving forces and restrictions of diffusion on the basis of theoretical consideration drawn from research literature on diffusion, policy-transfer and policy convergence. In a second step we describe the international spread of four environmental policy innovations by showing the respective pattern of spread. The varying relative importance of the influencing factors will be considered. We will demonstrate that beneath the central role of pioneering countries international organisations and transnational advocacy networks do matter as agents of diffusion. Finally we will draw preliminary conclusions about the mechanisms of diffusion, including considerations on the motivations of policy makers to adopt environmental policy innovations which are used by other countries or promoted by international agencies. We argue that the adoption of policy innovations from abroad cannot exclusively be explained by the decision makers' considerations of improving the efficiency of environmental policy making. Additionally, considerations of economic and especially "ideational" competitiveness of states within the international community affect the policy makers' decisions.

Governance, convergence and diffusion—catching the dependent variable

Diffusion is one possible cause of policy convergence. However, being a causal force of convergence not *necessarily* means being a effective mechanism of global governance. In order to assess the governance potential of policy diffusion impacts and outcomes of the transferred policies in the importer countries have to be taken into consideration.[88]

However, before analysing the governance potential of diffusion, we have to understand diffusion itself. Consequently, we concentrate on accounting for the pattern of subsequent policy adoptions (output-level) across time and countries. We are aware that it does not allow sufficiently sophisticated answers to the question: does diffusion really matter, because policy-output-convergence may disguise divergence pattern at the level of concrete policy design and national implementation performance. However, we have to focus more at the macro-level of the spreading process instead at a micro-level-investigation of the individual national adoption-decision-processes and the success or failure of transferred policies. We are in-

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87 This article is based on findings from an ongoing research project on "The diffusion of environmental policy innovations as an aspect of the globalisation of environmental policy" financed by the Volkswagen Foundation. Additionally, we like to thank Helge Jörgens. Especially the descriptions of diffusion curves of National Environmental Plan/Strategies for Sustainable Development and Ecolabels are influenced by his collaboration at an earlier version of this article.

88 Nevertheless we assume that almost each national policy adoptions—in the medium or long term—will foster capacity building and induce learning processes.

terested in the question what causes diffusion, in order to gain ground for explaining its governance potential. As research has to proceed from the fundamental to the more detailed questions, we hope to induce further research by our findings.

Factors affecting diffusion pattern

The growing body of literature on policy convergence, policy diffusion and policy transfer indicates that these processes are neither coincidental nor driven by any one simple mechanism which can easily be identified. Instead, a complex interplay of different factors has been found to influence the international spread of policies. Taking into account these studies[89] we define three groups of factors which affect the pattern of diffusion.

(1) Dynamics of the international system: By looking at these dynamics we intend to answer the question: How and why do environmental policy innovations spread internationally? The research focus, here, is on channels of communication or interaction which link national political units with each other. Growing interlinkages between nation states both in terms of economic and trade relation as well as the institutional and societal interweavements create channels for diffusion.

(2) National Factors: Considering these factors we can give answers to the question: Why do some countries adopt policy innovations earlier than others? The research focus is on endogenous variables which may account for the propensity and national capacity to adopt environmental innovations.

(3) Characteristics of the policy innovation: Characteristics of the policy innovation have to be taken into account when answering the question: Why do some policy innovations spread more quickly than others?

In the following these groups of factors are described in more detail.

DYNAMICS OF THE INTERNATIONAL SYSTEM

Global economic, political and societal interlinkages between nation states offer channels for the transfer of policies across countries.

Economic interlinkages are often perceived to create a pressure to modify regulatory policies in order to sustain or improve national competitiveness in a global economy. While the theoretical prediction of a downwards convergence lacks empirical evidence (Vogel 1997, WTO 1999, Hoberg 2001, Drezner 2001) the assumption that regulatory competition[90] sets incentives to adopt innovative measures at an early stage in order to gain "first mover advantages" (Porter and van der Linde 1995) has not been able to identify the necessary conditions for anticipating these prospective advantages which basically motivate the pioneer policy.

First mover advantages of institutional (Heritier et al. 1996)[91] or economic nature (Porter and van der Linde 1995) can be stated *only after* the political or technological innovations had diffused beyond the national context where they where initiated. Yet, diffusion is not an automatic process. A theoretical prediction of policy convergence driven by a "race to the top"-competition between nation states has to consider a number of dynamics of globalisation.

First of all, the degree of vertical integration in the international system, or, in other words, the existence of trans-national communication channels, increases the prospect of policy diffusion (Kern 2000: 167). Innovations must be communicated in order to diffuse.[92]

The increasing globalisation of communication via international organisations, transnational advocacy coalition or global scientific discourse offers channels for the diffusion of knowledge, best practice, perception of problems and the creation of common needs and beliefs.

John Meyer et al. (1997b) have pointed out that the

[89] See for example Gray 1973; Rose 1991, 1993; Bennett 1991; Dolowitz and Marsh 1996, 2000; Stone 1999; Kern 2000; Kern, Jörgens and Jänicke 2001, Drezner 2001.

[90] The term regulatory competition is used in the following notion: Regulatory competition represents the political dimension of economic integration and trade liberalisation. Differing jurisdictions are pressured to compete with policies which ensure competitive advantages or at least avoid competitive disadvantages of domestic firms. Regulatory competition as described by Adrienne Heritier (1996) is concerned with the competition between European Union member states to transfer their policies, administrative models or approaches to the EU-level, in order to avoid significant adjustment cost. The distinction between both meanings is, that the latter regulatory competition takes place in the shadow of a supranational integration instance (European Commission) and a prospect for an intergovernmental policy output, whereas the former is lacking similar political conditions.

[91] The argument of administrative first mover advantages (Heritier et al. 1996) is mainly restricted in its application on the EU context, where the anticipation of a common regulation is significantly higher than at the global level, because vertical diffusion may result in cross-national policy making at intergovernmental level.

[92] One of the original roots of diffusion research was the communication research (Roger 1962). Communication courses through the structures of a social system. Therefore, uncovering social/interactive structures between states can be useful in order to identify the courses diffusion will go and/or the motivations of policy-makers to adopt similar policies. The insight of sociologist research on organisational conformity mechanisms, network-analytical findings of structural equivalence or asymmetric relationships, which foster homogeneity, may be fruitful for political scientist too (See Friedkin 1984, DiMaggio and Powell 1991, Strang and Soule 1998).

global spread of environmental discourse and organisation—apart from the central role non-governmental actors played—was especially stimulated by the development of the United Nations (UN). One of the first clearly visible results of international organisation and discourse in the environmental field was the first UN Conference on Environment in Stockholm 1972 which in many countries set the agenda for the development of environmental policy as a distinct policy area (Jörgens 1996).

Besides disseminating information on environmental policy issues, some international organisations, for example the International Monetary Fund or the World Bank, are able to enforce adjustments by using the lever of asymmetric power relations or structural dependencies.[93] In contrast, NGOs and scientific communities provide and disseminate knowledge in order to change perception—their main modus of communication is "persuasion" (Keck and Sikkink 1999, Stone 2000).

Finally, a number of international institutions exist which are not created in order to solve collective-action problems (Martin and Simmons 1998, Botcheva and Martin 2001). Those "aspirational" institutions are weak international agreements without enforcement mechanisms, instead they set goals and standards for its member states and "...work through a long process of persuasion to encourage movement toward these standards" (Botcheva and Martin 2001: 12). Moreover, these aspirational institutions "typically…reflect the agenda-setting power of ambitious, well organised private actors. It therefore seems empirically accurate that aspirational institutions adopt 'high' standards of behaviour, since these groups hope to use the persuasive power of institutions to 'improve' the practices of states."(ibd. 13).

The "Toronto goal" of 20% reduction of CO_2 emissions of 1988 levels by the year 2005, formulated at the Toronto Conference on "Our Changing Atmosphere" is a striking example. The process of formulating this numeric goal was mainly pushed forward by the NGO community and considerably facilitated by the Prime Ministers of Norway and Canada, Gro Harlem Brundtland and Brian Mulroney, which both called for a global convention on climate change. The "Toronto goal"—although only a recommendation—stimulated not only public attention to the climate issue, but also national goal setting processes as in Germany in 1990 (25%) and political efforts to tackle the climate change problem by the development of national climate policies in the Netherlands, Germany, Canada and Norway in the early 1990s (see Social Learning Group 2001; Kasa 1999).

The observable effects of "persuasive power" indicate that there is another source of convergence which is more ideational by its nature "…states alter institutions and regulations because of a set of beliefs has developed sufficient normative power that leaders fear looking like laggards if they do not adopt similar policies" (Drezner 2001: 57).

These competitive dynamics are utilised and forced by the activities of certain international organisations like the OECD, or the UN. They systematically spur on "benchmarking" by comparing regularly national performances in specific issue areas like for example environment or education. Referring their provided information to a mutual agreed target (aspiration, norm) serves as instrument "in the exercise of 'shaming' and peer pressure" (Botcheva and Martin 2001:15).

To sum up we can distinguish two main driving mechanisms of diffusion of innovative policy measures rooting in growing economic and political-institutional interlinkages between nation states.

a) *regulatory competition* which may under certain circumstances lead to an upward convergence instead of the theoretical predicted "race to the bottom" (Scharpf 1999: 83). National policy makers may be forced by considerations of competitiveness to adopt the innovative policy measures of pioneers in order to avoid significant economic or administrative adjustment costs (Héritier et al. 1996; Vogel 1997, Jänicke and Weidner 1997a; Kern, Jörgens and Jänicke 2001: 4-5). Pioneer behaviour in turn may be triggered by the same considerations, i.e. the expected global spread of political and/or technological innovations. This expectation that innovations introduced by pioneer countries will subsequently be adopted by other countries is supported by the existence of a second competitive dynamic:

b) *ideational competition* which may become the driving force of policy emulation as a consequence of the establishment of environmental protection as an internationally accepted and shared norm. This may result in "bandwagoning" effects (Ikenberry 1990) or "norm-cascades" (Finnemore and Sikkink 1998), where nation states can no longer resist adopting certain measures, aims or strategies—without threatening their image as legitimate members of an environmentally responsible family of the global society.[94]

[93] Compare Dolowitz and Marsh (2000) who have developed a continuum of types of policy transfer ranging from voluntariness to coercion.

[94] For this argument and related approaches of sociological institutionalism or the world-society approach see for example

NATIONAL FACTORS

At the national level the specific political, economic, societal and institutional capacities of countries influence the demand for and the feasibility of policy innovations (Kern, Jörgens and Jänicke 2001a: 8). Similarly, endogenous problem perception and the power of pressure groups have an effect on the demand for new solutions.

Institutionalists ascribe those domestic factors contrary weights when accounting for the effects of international institutions/organisations which promote knowledge, goals and ideas. As diffusion research is interested in the effects of exactly those organisations which engage in the "idea game" instead of the "law game" (Marcussen 2001) this theoretical contradiction requires attention. Botcheva and Martin (2001) argue that cross-country variations in existence, organisation and access chances of domestic pressure groups determine the effects on state behaviour of so called international "aspirational institutions". In countries where well organised interest groups and adequate access chances exist those aspirational institutions matter, because these groups may use the international norm for generating pressure on their governments for policy change (13). In countries without these groups advocating the issue promoted by the international institutions they will not matter. In contrast, Finnemore and Sikkink (1998) concluded from empirical studies that states may adopt policies even though the face no domestic pressure to do so. Instead, international dynamics will become dominant at the tipping point, "… when enough states and enough critical states endorse the new norm to redefine appropriate behaviour for the identity called 'state' …" (901 pp).

The expected divergence effect of institutions on state behaviour suggested by Botcheva and Martin (2001) and the expected convergence effect of similar institutions suggested by Finnemore and Sikkink (1998) accompanied with a different weighting of domestic factors are in fact not mutually exclusive, they only reveal differences in the kind of effects they intend to investigate. The former look at state's *compliance* with international "soft" agreements and discover divergent policy *outcomes*. The latter focus on international *dynamics* which cause convergent national policy *adoptions*. Yet, focussing on policy adoptions only does not allow to distinguish between "deep" and "superficial" policy adoptions, meaning adoptions which are largely symbolic or involve extensive commitment of resources (Berry and Berry 1999: 189). We argued (see above) that this distinction will become relevant in another stage of research which goes far beyond the original focus of diffusion research and focuses on the governance potential of diffusion by investigating outcomes and impacts of what diffused (Jörgens 2001: 125)[95]. The clue we can draw, is that we can expect domestic factors to play a significant role for policy adoptions at least in the early stage of the diffusion process[96], but not necessarily for each national policy adoption during the whole process as they may be overarched by international norm dynamics.

Among national factors, attention has especially been directed to administrative traditions, regulative structures and policy styles and the legacy of past policies which considerable differ across countries. This emphasis on "administrative fit" or the "logic of appropriateness" (March and Olsen 1989) is based on the general assumption "that institutionally grown structures and routines prevent easy adaptation to exogenous pressure" (Knill and Lenschow 1998: 2). Sometimes they are emphasised as forces promoting divergence (Hoberg 2001:127, Jordan 2001: 20). We argue that national administrative structures may delay or prevent the adoption of path-deviant policies. But mainly they will be responsible for variations in the degree of convergence ranging from policy similarities with respect to policy ideas and approaches, the utilisation of certain policy instruments or the qualitative level of policy regulations. Therefore, we argue that a global convergence of policies will never exclude divergent national adaptations as "…we would never expect a programme to transfer from government to another without history, culture and institutions being taken into account" (Rose 1991: 21).

To sum up, we consider national factors as crucial for answering the question why nation states adopt policy innovations early, later or resist an adoption. Furthermore, they help explaining national variations in the policy innovations' design.

Ruggie 1998, Katzenstein et al. 1998, Schimmelfennig 1998.

[95] An interesting study of Kern et al. (2001b) pursues this approach focussing not only on factors influencing policy adoptions but also factors which cause success or failure of diffusion. Kern et al. state that "while the global diffusion of policy innovations is strongly influenced by global transfer institutions, national policy change and national performance is primarily determined by national factors" (2).

[96] Considering that policy innovations often are very flexible by their nature and therefore not necessarily an invariant quality during the whole diffusion process (Rogers 1995:17), a high probability of re-invention in later stages of the diffusion process reveals the vulnerability of this argument, that domestic factors in general lose their importance for motivating adoptions in later stages of the diffusion process (Finnemore and Sikkink 1998). The empirical studies from which they draw their conclusions were concerned with the spread of relatively inflexible innovations such as the women's suffrage or bans of land mine use.

CHARACTERISTICS OF SPECIFIC POLICY INNOVATIONS

Finally, the specific characteristics of the policy innovation itself have to be taken into account. Surprisingly, studies on policy diffusion often tend to systematically ignore this group of factors (Dolowitz and Marsh 2000:3). Nevertheless, comparative studies revealed that the speed and the pattern of spread do vary dependent on the specific features of the policy innovation (Bennett 1997; Jänicke and Weidner 1997a; Jänicke and Jörgens 1998; Kern, Jörgens and Jänicke 2001). Bennett even concludes "…that the major variable to consider when assessing the diffusion of an innovation is the inherent properties of the issue."(1997: 229, see also Rogers 1962/1995: 204).

We argue that certain properties of the innovation may influence its "diffusability" However, defining properties of policy innovations is challenging. A policy innovation has to pass through a whole policy cycle. At each stage of this cycle the innovation decision process can break off, due to the underlying problem structure or problems of technical or political feasibility.

To sum up the findings from literature we extract three categories:

- the underlying problem structure;
- political feasibility
- compatibility (technical feasibility).

We are aware that heterogeneous national contexts can significantly vary the technical and political feasibility of policy innovations. The implications of policy innovations pose distinct adaptation challenges. However, we intend to define minimum criteria to generalise properties of policy innovations relevant for the rate of adoption in the international system.

The underlying problem structure of a policy can be described in terms of

- the ease of agenda placement due to visibility of a policy problem and subsequent public pressure,
- power of the polluters and
- availability of technical options to solve the problem (Jänicke, Kunig and Stitzel 1999: 82).

In cases where the problem structure is unfavourable, the diffusion of policy innovations may be significantly hindered (Jänicke and Weidner 1997a; Jänicke and Jörgens 2000: 612-613). However, applying this category for describing politically relevant properties of policy innovations is restricted to those innovations which address environmental problems directly. In contrast to traditional environmental legislation, focusing on media-related environmental problems, a large part of environmental policy innovations is not designed to address environmental problems directly. Instead, they try to improve the kind and the effectiveness of the political management capacities for environmental protection (e.g. regulations on free access to environmental information).

With regard to the compatibility of policy innovations with existing regulatory styles and structures, it is likely that the extent of policy change induced by a regulatory innovation is decisive for its diffusion. Considering the filtering effect of national institutions mentioned above, it can be assumed that the innovation's ability to diffuse will depend on how easily it can pass through these filters. For example, it is easier to create a separate environmental ministry than to effectively integrate environmental concerns into the decisions of all relevant ministries. The spread of innovations inducing only an incremental change and which can easily be added to existing structures can be expected to be faster (Kern, Jörgens and Jänicke 2001: 11-13)[97].

Furthermore, the political feasibility of an innovation depends on its potential to provoke conflicts with powerful actor groups (Kern, Jörgens and Jänicke 2001a: 24). Especially the fiscal effects of policy instruments are crucial for evaluating the potential of conflict induced by the innovation. Redistributive policies that affect powerful interests, especially those who are internationally mobile, are less likely to diffuse rapidly. Therefore, the exposure of the policy innovation to regulatory competition can be characterised as a raw criterion for the prospect of its rate of adoption. A more sophisticated distinction of policy innovations exposed to regulatory competition states that the political feasibility depends on whether the underlying economic competition concerns the quality of products or costs of production which cannot be transformed into product qualities (Scharpf 1999). Regulative measure which affect product qualities in terms of lower consumption and production externalities may result in competitive advantages of domestic producers on international market for high quality goods—the so called "Certification effect" of national regulative measures (ibid.: 8) may foster the diffusion of the respective policy innovation.

In the following section, the aptness of these factors

[97] The administrative implications of supranational or intergovernmental policy-outputs are especially elaborated within the context of European integration. This approach which pronounces challenges of administrative convergence finds its expression also in the so called "regulative competition-hypothesis" between member states, which assumes that states are forced to adopt forerunner-strategies in order to avoid significant adjustment costs caused by a late adoption. (Heritier et al. 1996; Andersen and Liefferink 1997).

for explaining the diffusion of concrete environmental policy innovations will be illustrated on the basis of four empirical examples: national environmental policy plans and strategies for sustainable development, ecolabels, energy/carbon taxes, and legal provisions on the free access to (environmental) information.

The global spread of environmental approaches and instruments—four examples

NATIONAL ENVIRONMENTAL POLICY PLANS AND STRATEGIES FOR SUSTAINABLE DEVELOPMENT

Innovation profile. National environmental policy plans and strategies for sustainable development are governmental action plans adopted by means of a cabinet and/or parliamentary decision. They integrate industrial and societal interests, are drawn up with broad public participation and set long-term environmental policy goals and priorities across media and sectors. Sustainable environmental planning represents an important shift from a strongly fragmented, primarily medium-oriented and instrumental environmental policy towards an integrated strategy guided by long-term goals (Jänicke and Jörgens 1998).

The profile of spread. The approach of strategic, goal-oriented environmental planning has spread very rapidly since the 80s in industrial countries, but also in newly industrialised and developing countries. Within a decade of the adoption of the first national environmental policy plan in Denmark (1988) and the Netherlands (1989), almost two thirds of OECD countries and about 80% of the more developed CEE countries had adopted national environmental policy plans (Jänicke and Jörgens 2000: 614-616).

The run of the curve shows a sharp rise beginning in the end of the 1980s. A number of factors have influenced the relatively rapid world-wide spread of this policy innovation. Although internal impetus for strategic planning was apparent in certain countries, like in the Netherlands or the United Kingdom, international processes, like the Brundtland Report (1987) or the Agenda 21 (1992) were most influential and accelerated national developments (Jänicke, Carius and Jörgens 1997). Probably the most important international event was the 1992 UN Conference on Environment and Development in Rio de Janeiro and the action plan adopted there, Agenda 21, which called on all signatory states to formulate a "national strategy of sustainable development". In 1997, at the special session of the UN assembly in New York, this resolution was confirmed and a 2002 deadline was set for developing national strategies for sustainable development (Kern, Jänicke and Jörgens 2001: 18). Since 1992 the OECD has systematically included the existence or non-existence of a comprehensive environmental plan among its criteria for assessing the environmental performance of its member states, sometime connected with emphatic recommendations for "laggards".[98]

Besides these international driving forces, a number of national or regional activities also affected the international diffusion of national environmental policy plans.

For Central and Eastern European countries burdened with the legacy of past environmental depletion and confronted with system change the Polish "National Environmental Policy" adopted in 1991 had comparable model-character (OECD 1995b: 104) like the Dutch plan (1989) for the more developed and wealthier countries and the European Union's Fifth Environmental Action Programme (Jänicke, Jörgens and Koll 2000: 221-222).

The Environment for Europe process decisively stipulated the development of national environmental policy plans in Central and Eastern Europe. At the first ministerial meeting in Dobris 1991 the decision was passed to develop an Environmental Action Plan for CEE. A task force managed by the OECD and the World Bank drafted this plan, which was passed at the 2nd conference in Lucerne in 1993. This Environmental Action Programme for CEE constituted the blueprint for the development of Nation Environmental Action Plans in that region. 16 countries from the region—assisted by the OECD—have since developed such a programme or are in the process of doing so (OECD 1998: 7).

Overall, it can be said that while only in a few countries (such as the Netherlands) far-reaching environmental policy goals or changes in the administrative organisation of environmental policy have been decided, in the majority of cases such plans have been developed without drastic consequences for existing environmental policy (Jänicke and Jörgens 1998). The development of national environmental plans has

[98] The recent Environmental Performance Review for Germany from 2001 states in emphasized cursive letters: "*Germany does not yet have an agreed national strategy for promoting sustainable development*" (OECD 2001b: 109). Furthermore, since 1998 on the demand of the member states' ministers the OECD strengthens its efforts to support Sustainable Development. Within the organisation an separate organisational division was created—OECD Sustainable Development. It intends to promote sustainable development among its member states. Only recently the OECD published assessment reports on the progress of formulation and or implementation of national strategies for sustainable development in Canada, Germany and the United Kingdom. www.oecd.org/oecd/pages/home/displaygeneral/0,3380,EN-about-21-nodirectorate-no-no-no-21,FF.html

thus been a largely additive process (Kern and Jörgens and Jänicke 2001: 19).

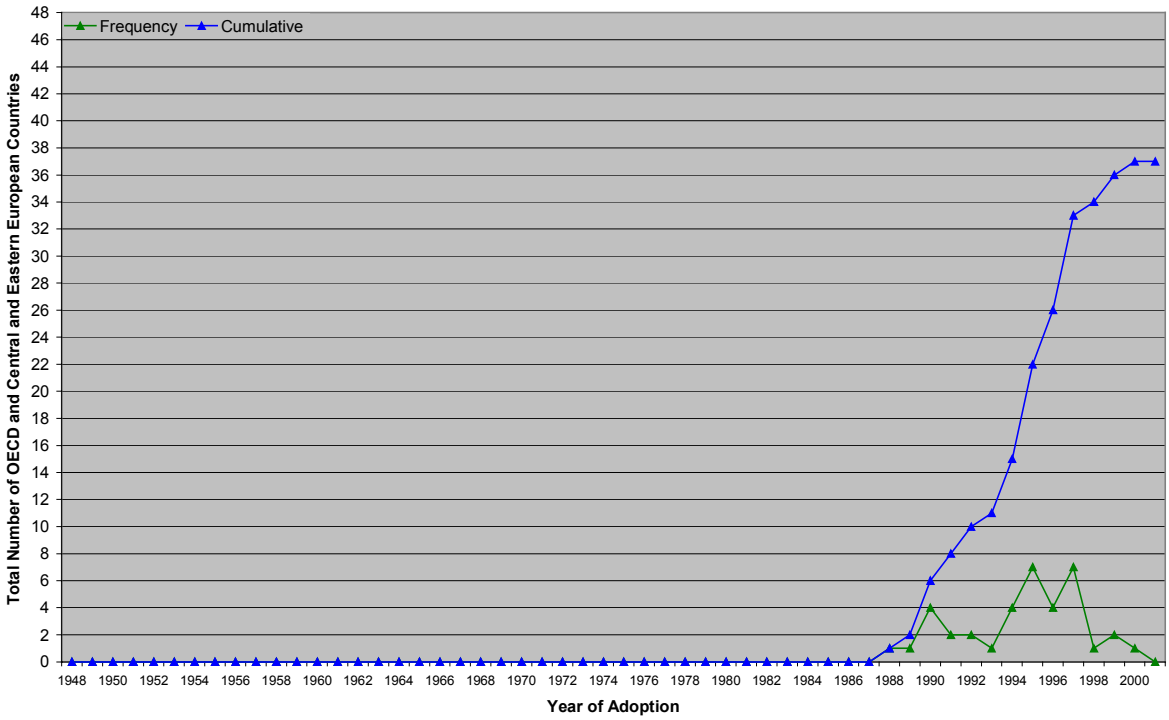

Figure 1: Spread of National Environmental Policy Plans and strategies for sustainable development in OECD countries and Central and Eastern Europe (Busch and Jörgens 2002)

ECOLABELS

Innovation profile. Ecolabeling can be defined as "the practice of labeling products based on a wide range of environmental considerations" in order to make relevant environmental information available to the consumers (EPA 1998: 5). Ecolabels enable consumers to include environmental aspects as criteria in their purchasing decisions. Indirectly, environmental labeling may also affect producers as they design products that have to compete not only with respect to price and quality, but also to some extent with respect to environmental attributes (EPA 1998: 5).

In the following we will focus on the spread of nation-wide voluntary ecolabeling schemes relying on third-party-verification, using a mandatory set of criteria and which are not limited to one or few product groups.

The profile of spread. The first country to introduce a national ecolabeling programme was Germany. Although the German "Blue Angel" of 1978 has certainly served as a model for the development of similar initiatives in other countries and in the EU, it was not until 1988 that Canada followed the lead by introducing its own national ecolabel "Canada's Environmental Choice". A first marked rise in the curve occurred in 1989 when four Scandinavian countries adopted the multinational ecolabel "Nordic Swan" and Japan and the US developed their own national programmes. While most ecolabeling programmes are public policies the US "Green Seal" in contrast is not a government associated programme but privately funded and directed by a national non-profit organisation (OECD 1997: 27).

The international spread of ecolabeling programmes accelerated even further when in 1992 the Council of Ministers of the EU adopted a regulation introducing the "European Flower" as an EU-wide ecolabel (Council Regulation (EEC) No 880/92).[99]

[99] The EU Ecolabel is run by the European Commission and administered by competent bodies in all member states as well as Norway and Iceland (EPA 1998: B-31). Product groups are chosen and criteria are developed by the European Commission in close collaboration with the Committee of Competent Bodies as well as stakeholder organisations. Ecolabels are awarded by the competent bodies within their country. National Authorities are in charge of monitoring that ecolabels are properly used. The EU-wide ecolabeling procedure does not replace national ecolabeling programmes and the "Nordic Swan" which continue to exist.

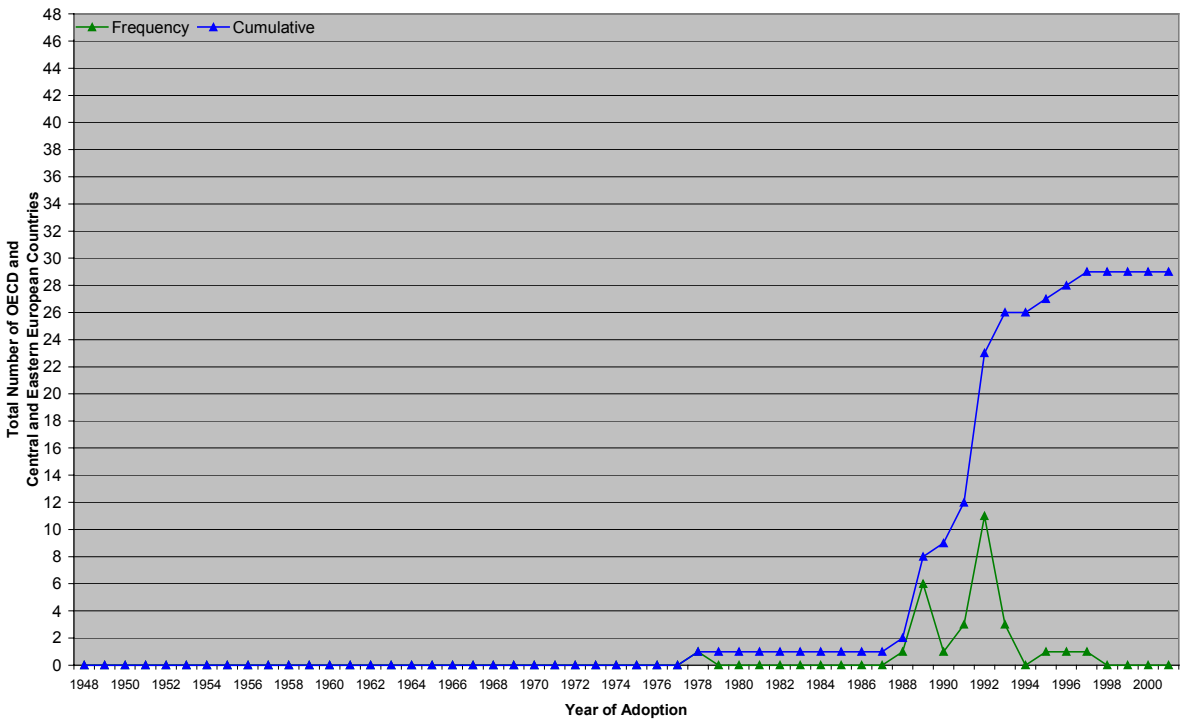

Figure 2: Spread of ecolabels in OECD-countries and Central and Eastern Europe (Busch and Jörgens 2002)

In a very short period from 1988 to 1992 there has thus been a rapid spread of this new environmental policy instrument which has been driven mainly by regional co-operation within the Nordic Council and in the EU. This spread can only to some extent be classified as diffusion. The process leading to the development of the "European Flower" can be characterised as a vertical and "bottom-up"-driven diffusion mechanism[100]. The European ecolabel was strongly inspired by already existing European national ecolabeling programmes as for example the German, French (1991) and the Austrian (1991) ecolabel as well as by the multi-national "Nordic Swan" (see Landmann 1998: 113). But the introduction of the EU-ecolabel transforms the vertical diffusion process into the development and application of supranational law. Policymaking within the EU rather has to be described as a specific case of multi-level governance (e.g. Scharpf 1993, 1994; Jachtenfuchs and Kohler-Koch 1996) where processes of policy diffusion mingle with supranational decision-making.

While in a significant number of European countries ecolabels have been utilised only as a response to decisions taken at the supranational level the development of national ecolabeling programmes proceeded world-wide. Outside the EU, national ecolabel programmes were adopted (1990: New Zealand; 1991: Australia; 1992: Korea; 1993: Croatia, Czech Republic, Hungaria; 1995: Lithuania; 1996: Slovakia; 1997: Latvia). But also two EU member states (Netherlands 1992, Spain 1993) introduced an own national label additionally to the existing supra-national label. The development and adoption of ecolabels in CEE countries was partly influenced by consulting services of the German Federal Agency of the Environment, organising workshops for CEE countries as guidance for the development of ecolabeling programmes in that region and promoting the German Blue Angel (See Landmann 1998: 101).

Summarising, at the end of the year 2000 ecolabeling programmes are in place in 23 of the OECD member countries and 6 CEE countries. However, due to significant differences between national labeling programmes there is a considerable need for international harmonisation. On this background, international organisations and networks—like the issue-specific "Global Ecolabeling Network", founded in 1994, or the International Standard Organisation (ISO) as well as the OECD and the UNEP (UN Environment Programme)—which were hardly involved in this initial spread of ecolabels, increasingly try to become a part in the process. Their efforts are especially directed at an international harmonisation of ecolabels (Kern, Jörgens and Jänicke 2000: 526) and/or their mutual recognition (UN Commission on Sustainable Development 1995: 6-8).

[100] Vertical policy diffusion is a likely phenomenon in multi-level-systems, as for example the USA or the EU. Vertical bottom up diffusion characterises the transfer of a policy innovation from the national (or sub-national) level to the superior policy-level (Kern 1998: 3).

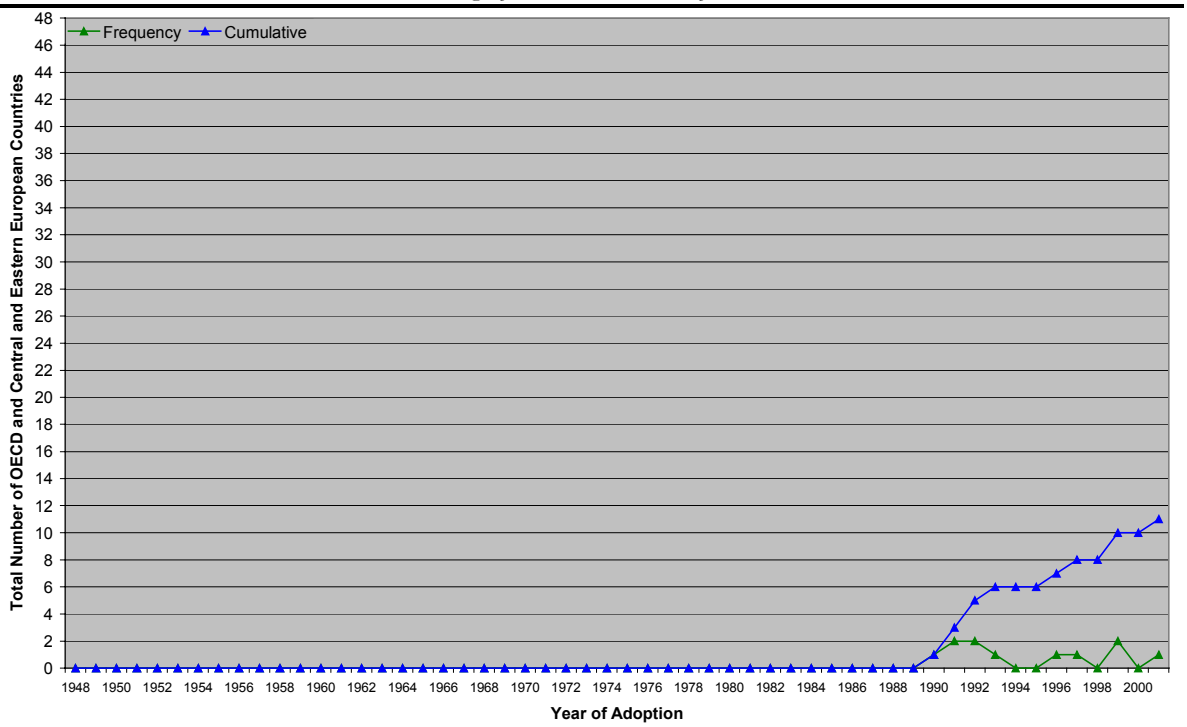

Figure 3: Spread of energy/carbon taxes in OECD-countries and Central and Eastern Europe (Busch and Jörgens 2002)

ENERGY/CARBON TAXES

Innovation profile. Energy/carbon taxes are market-based environmental instruments, which tax the use of energy. The overarching goal of energy-related taxes refers to climate change prevention by reducing CO_2 emissions from the use of fossil fuel in energy production and transport. Taxes "…imposed on products or key factors of production, where the goods are traded widely in the international market" (OECD 2001a: 72) are exposed to regulatory competition. Existing tax models differ with respect to the tax base, which either can be related to the carbon content and/or energy content of fossil fuels or related to the final consumption of energy products, respectively a combination of both approaches. Being aware that different tax bases may influence the ecological outcome (OECD 2001:59), we decided to concentrate (in the first run) on the diffusion of the general approach to tax energy use which is ecologically motivated and aims at climate protection and reduction of carbon dioxide emissions.

The profile of spread. In 1990, the first country to introduce a carbon tax on fossil fuels was Finland. However, Finland "… has hardly perceived itself as a 'good example' that other countries could learn from" (Andersen and Liefferink 1997: 25). It was followed by Norway (1991), Sweden (1991), Denmark (1992) and the Netherlands (1992). The nearly simultaneous policy adoptions in the Scandinavian countries had been co-ordinated by the Nordic Council (Kern, Jörgens and Jänicke 2001). Once again and like in the case of Ecolabels (see above), this regional association facilitated and co-ordinated the national adoption and implementation.

The European discussion surrounding the European Commission's proposal to introduce a common energy/carbon tax in 1992 (KOM (92) 226, 30.06.1992) accelerated at least three of these unilateral carbon tax adoptions. Denmark pursued a pusher by example strategy (Liefferink and Andersen 1998) and unilaterally introduced a national energy/carbon tax in order to influence European policy-making. In July 1992, the Netherlands introduced an energy/carbon tax modelled on the European Commission proposal (Schlegelmilch 1999: 19). Considering the early efforts (1988 fuel charge) and later developments (1996 regulating energy tax) "the Netherlands provide an interesting example of progressive transformation of earmarked charges into unrequited taxes" (Barde 1999: 34). Sweden—being at that time not a member of the EU—introduced a national carbon tax apart of domestic motivations with the intention to set an example soon to be followed by other countries.

This first wave of energy/carbon tax adoptions in the early 90s can be ascribed to pusher strategies of typical European pioneer countries, which adopt domestic policies as example to be followed by other countries or to accelerate international policy development.

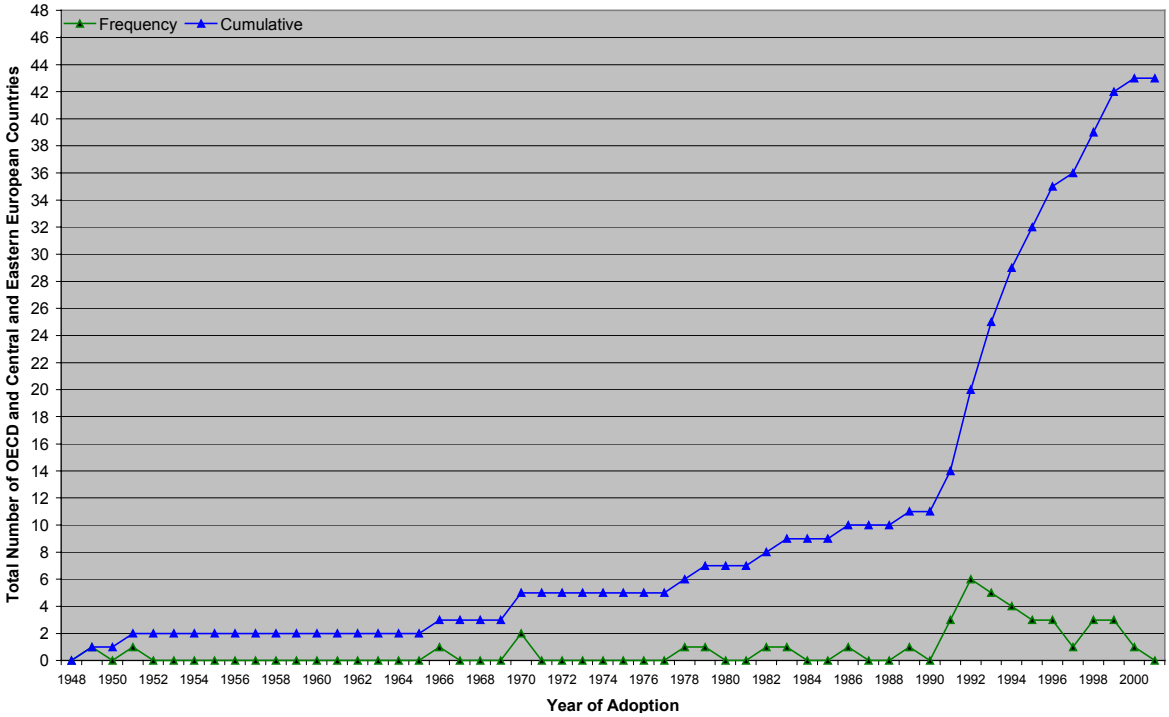

Figure 4: Spread of public-access-to-information provisions in OECD-countries and Central and Eastern Europe (Busch and Jörgens 2002)

As the curve illustrates after this first wave the spread proceeded rather slowly. However, information transfer was essentially stimulated by benchmarking activities of the OECD (OECD 1993, 1995a, 1999, 2001a) and the European Environment Agency (EEA 1996, 2000) which increasingly promote energy/carbon taxes within the context of broader green tax reforms. With the adoptions of energy taxes in Germany and Italy 1999 and the introduction of the British Climate Change Levy in 2001 critical countries[101] adopted this policy innovation. Achieving a critical mass of adopters, what can be facilitated by these adoptions, may accelerate the diffusion process. Accompanied with the international developments concerning the refinement and ratification of the "Kyoto protocol" it can be assumed that the process will continue.

The diffusion of energy/carbon taxes as shown in figure 3 is interesting for a number of reasons. It is striking that—following the joint front-runner policy of the Nordic countries—apart of Slovenia (1997) only wealthy northern and western European states have so far begun introducing energy/carbon taxes.

The diffusion of energy taxes provides a good example that although the perceived threat of competitive disadvantages considerably affects the environmental policy making and the diffusion dynamic, it does not prevent unilateral adoptions of those policies which are exposed to regulatory competition.

The dynamic behind this spread within the European context can be described on the one side as—at least European—lesson-drawing process of how to reconcile the global climate protection issue with other national but similar economic and public policy objectives. On the other side this dynamic reveals aspects of both diffusion mechanisms: Ideational competition in order provide the nation state's stake for global climate protection, but also regulatory competition for ensuring competitive advantages for domestic industry as the spread of similar mitigation strategies (exemptions and rebates for industry sectors) indicates. Furthermore, embedding energy/carbon taxes in comprehensive tax reforms uncovers also other policy objectives and political attempts to gain additional benefits from this reform, as revenues raised from energy related taxes are "channelled to reduce the marginal tax rates of other distortionary taxation" (OECD 2001a: 123).

LEGAL PROVISIONS ON THE FREE ACCESS TO (ENVIRONMENTAL) INFORMATION

Innovation profile. FAI provisions are regulations granting all citizens the free access to information held by

[101] The planned extension of the French General Tax on Pollution to a taxation for energy use by industry to take effect January 1, 2001, was rejected by the French Constitutional Court. The proposal was judged to be "contrary to the principle of equality", because it would tax different energy users differently. The second count for rejection was that an application of the energy tax fell beyond the state's aim to reduce greenhouse gas emissions because electricity in France comes primarily from nuclear power (CSE 2001, No 2). However, not only the former Minister for environment, Dominique Voynet, but also the new one, Yves Cochet, continue efforts for extend the General Tax on Pollution, as it is a basic requirement of the Green's participation in the French coalition government (CSE 2001, No. 2, No. 4).

public authorities. With regard to FAI provisions one has to differentiate between regulations concerning the access to information in general and specific regulations concerning the access to environmental information in particular. Both types of transparency-laws intend to increase the general accountability and public control of bureaucratic action and both—general as well as specific regulations—include the free access to environmental information.

On the one hand they include the obligation of public bodies to gather and disseminate information and to keep the public informed about relevant environmental developments (active obligation). On the other hand they oblige public authorities to respond within a given time frame to specific requests for information from the public (passive obligation). FAI provisions cover environmental data and statistics as well as information about activities of private entrepreneurs held by the authorities.

The profile of spread. Public access to information looks back on a long tradition. So-called transparency laws existed for example in Sweden since 1766 (FOE 1995: 5; Kloepfer and Mast 1995: 143). Until the year 2000, FAI provisions have been adopted by about 80% of all OECD and CEE countries (see figure 4).

A first phase of policy development which we classify as the development and spread of *general* provisions for public access to official documents started in 1949 with the transformation of the above mentioned Swedish constitutional provision into the Act on Free Public Access to Government and Official Files within the frame of the Freedom of Press Law (Kloepfer and Mast 1995: 143). Shortly after, in 1951, Finland adopted the Act on Publicity of Official Documents. These temporarily very close adoptions can be traced back to the early and deep connection between Finland and Sweden.[102] Such interrelations of regions are often perceived as structural determinants of diffusion.[103]

The next adoption of a FAI legislation took place in the USA 15 years later. The 1966 US Freedom of Information Act (FOI) (and its later amendments) is predominantly quoted as the salient model demanded for copying by environmental organisations worldwide. The Scandinavian development and the adoption of the US FOI Act represent temporally sequenced but independent parallel developments.

All national adoptions of the first stage are general FAI provision. Regional co-operation between geographically linked countries explains to some extent the diffusion among Scandinavian countries (in addition to Sweden and Finland, Norway and Denmark adopted acts on public access to information in 1970).

A second phase during the 1970s and 1980s was characterised by a sequence of mainly sporadic adoptions causing a continuous, but still rather slow rise of the diffusion curve. Finally, starting in 1991, the rate of adoption of FAI provisions suddenly accelerates. Interestingly, from this year on most of the adopted FAI provision specifically concern *environmental* information. With its comprehensive environmental framework law of 1991, the Resource Management Act, New Zealand was the first country to introduce a national provision for free access to environmental information, followed by Latvia in the same year as the first country from Central and Eastern Europe.

The increased frequency of adoption of public access laws from 1991 until 1999 compared with the earlier phases has been influenced by a number of factors. In June 1990 the EU passed a directive on free access to environmental information (Directive 90/313/EEC). At the international level, the Rio-Declaration of 1992 made explicit reference to public participation and free access to information.[104]

After the collapse of the CEE communist systems in 1989/90, the new governments as well as societal actors started to realign predominantly with the Western model of democracy.[105] Immediately a transition process started into a system based on (besides the principle of market economy) democratic rules and civil rights. An additional impact on the motivation to adopt FAI provisions for some of the CEE countries resulted from the early and meanwhile relatively certain prospect of their integration into the EU and the requirement to adopt the whole acquis communautaire. In 1992 four out of six adopting countries were from CEE: Ukraine and Hungary

[102] No more than around 80 years ago Finland became an independent republic (1917). It was a part of Sweden from 1323 until 1809 (the remaining time until 1917 it had the status of an autonomous grand duchy of Russia). And as the Swedish law from 1949 rooted in the constitutional provision from 1766, which was legally binding for Finland too—the nearby dates of adoption can be interpreted by these historical connections.

[103] For the network-analytical approach used in political geography see for example Lutz 1987.

[104] Principle 10 states: "Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided."

[105] In a couple of these countries environmental groups even constituted a bearing part of the anti-regime-opposition.

adopted FAI provisions as a general act on free access to information held by public authorities.

In 1993 the UN Economic Commission for Europe (UNECE)—within the Environment for Europe process—was called upon by the participating environmental Ministers to set up a task force on environmental rights and obligations—culminating 1998 at the 4th Ministerial Conference in the Environment for Europe series in the adoption of the UNECE Convention on Access to Information, Public Participation and Justice—the so called Aarhus Convention. At the beginning of the 21st century the issue of free access to environmental information has captured the political agenda of almost all international organisations.[106]

Summarising, we can observe that the diffusion of FAI provisions started to accelerate when the issue entered the agendas of supranational bodies or international organisations. They served as international platforms for the original promoters of these legal provisions—citizens' and environmental organisations. The process can be partially referred to as a "bottom-up" mechanism of convergence, driven mainly by non-governmental actors and actor-networks, which effectively used international platforms as catalysts and multipliers. Later it turned to a more "top-down-driven" mechanism.

Like in the case of the ecolabels, the transposition of the EU Directive into national law of the member states should not be equated to the term of diffusion. Similar to the ecolabels it can be said that the diffusion of the policy innovation stopped at the moment the directive was passed by the Council and member states were obliged to transpose and implement this directive. Nevertheless, prior to the adoption of the directive, experiences from the Scandinavian countries, the Netherlands, from France as well as from the USA were explored and used by European environmental NGOs, the European Parliament and the EU Commission to develop a draft directive.

It is interesting to note that FAI provisions were adopted even by countries[107] with little public capacity to gather, organise or provide these types of information, and where NGOs were very weak. This leads to the assumption that policy adoption may not always be motivated by the expected impact of policy instruments (i.e. more efficient participatory environmental management), but rather by the relative importance of an innovative policy instrument on the global environmental agenda. The latter seems to be a decisive factor for explaining the international spread of FAI provisions—in any case, sufficient to motivate the adoption of FAI provisions, as they are suitable to be communicated as an appropriate response to a norm within an international and environmental responsible society within which the respective adopter intends to be a legitimate member. With respect to the perspective of global convergence in FAI provisions it can be assumed that the high prominence of that issue as it is represented in international declarations and conventions may facilitate a future *international policy-output*. UN Secretary-General Kofi Annan interpreted the adoption of the Aarhus Convention as "a giant step forward in the development of international law in this field" (OECD 2000:13).

Conclusion

The main question we intended to answer in this article referred to the drivers and restrictions of the diffusion process. The still very preliminary findings suggest that the spreading of environmental policy innovations is more likely if these policy innovations figure prominently on the global political agenda. Political and societal interlinkages between nation-states and actors within and across states offer channels of diffusion which enable the transfer of problem perceptions, ideas and policy innovations beyond national boundaries and to the level of international organisations. These may function as multipliers of knowledge-dissemination and/or ideational catalysts of policy-convergence.

As an overall statement the assumption holds true: promotion at the international level does matter. However, this statement remains too superficial and the data, in fact, suggests an additional differentiation. For a deeper and better understanding our concluding remarks consider the following questions:

- Why does promotion by international agents turn into motivation on the part of national policy makers to adopt a policy innovation?
- Why do some innovations not spread even though they are actively promoted at the international level?
- Why do some innovations spread without active international promotion?

The above-mentioned specific characteristics of a policy innovation offer preliminary answers to the last two questions. The case of energy/carbon taxes re-

[106] See for example OECD Council Recommendation on Environmental Information, adopted in Paris by the Environmental Ministers and the OECD Council in 1998, or the Free Access Provisions within the Environmental Side–Agreement to the North American Free Trade Agreement from August 1993.

[107] For example in 1998 Albania and in 1996 Macedonia.

veals that policy innovations with a high conflict potential due to their redistributive effects are less likely to rapidly diffuse. Moreover, the exposure of eco-taxes to competitiveness concerns considerably affects their political feasibility even in adopting European countries which apply exemptions for industry to mitigate these perceived but uncertain negative impacts on domestic industry's competitiveness. This is true in spite of the fact these instruments have actively been promoted by many of the most influential international organisations such as the OECD, the United Nations and also by the European Union for many years.

Furthermore, the case of energy/carbon taxes reveals another interesting finding for diffusion research: Political entrepreneurship at the supranational level in multi-level systems like the EU may—even without having a realistic prospect of *immediate* success to reach a common policy solution—incite pioneer behaviour at the national level. Member state's competition for influence on the shape and administrative design of the common solution may induce such first-mover-strategies, because the anticipation of followers and therefore realisation of first-mover advantages is extremely increased by the establishment of political debates about a potential common solution.

A comparison of the diffusion of energy/carbon taxes with the cross national adoption of green plans and strategies for sustainable development, both of which became an issue at the international level in the late 1980s, clearly reveals that the characteristics of the innovation determine to a great extent the speed of its diffusion. National environmental policy plans and strategies for sustainable development—as they have been developed in most industrialised countries—can easily be added to existing environmental policies and do not necessarily induce any fundamental policy change. The same is true for ecolabels, which spread relatively quickly as well.

Another preliminary conclusion which can be drawn from the ecolabels case is that, being a predominantly product related measure, the spread of ecolabels is promoted by the dynamics of international trade. If consumer behaviour is at least to some extent influenced by environmental considerations then participation in some type of ecolabeling scheme can be seen as a rationale for ensuring sales opportunities and market shares. Hence, the potential of trade as conduit for policy diffusion may offer an additional explanation for the rapid spread of ecolabels.

In accordance with the insights of organisational sociology that an organisation's propensity to innovate depends on the strength of obstacles, the available resources to overcome them and the motivation to innovate (Mohr 1969: 114), we can conclude that with respect to energy/carbon taxes most of OECD and almost all CEE countries experienced overwhelming obstacles to adopt such a tax. In contrast, the relatively rapid spread of the other three innovations suggests that policy makers could overcome more easily the obstacles—if such existed—obstructing their adoption.

However, the question about the motivations of policymakers to adopt these innovations is still unanswered. Apparently, the frequency of national adoptions rises as policy transfer becomes more strongly institutionalised at the international level. But how does promotion at the international level influence the motivation of policymakers to adopt these instruments? One possible answer might be that the politicians' need and the provisions of international organisation may complement each other.

Concerning the politicians' need, the main reason for policy makers to look at what the others do is uncertainty, which forces mimetism (DiMaggio and Powell 1991: 69). On the one hand, uncertainty can refer to the issue of environmental protection and the pressure to act adequately. On the other hand, it can also be related to very other ambivalence a state is confronted with—for example how to establish in the international system in order to attract perception or investment and to influence the own positioning within this system.

International organisations provide "models", whose creation is based on "best practices" which have been promoted at international level. Models are an essential prerequisite for mimetism. However, a national policy innovation not automatically becomes a model. The status of a "model" a national policy can only gain, if others do award this attribution to the respective policy innovation. The promotion and information activities of international organisations do exactly provide this service.

Addressing the question of policy-makers' motivation to adopt policy innovations, which are promoted, the essential link between promotion and motivation is that the orientation towards models provides legitimacy for policy-makers decisions (Radaelli 2000: 28). The attempts of national policy makers to cope with uncertainty may account for their orientation at international promoted policy innovations or models. This orientation offers additional political advantages because it may serve as an external source of legitimacy in the national context, as well as an attempt to verify the nation states' legitimacy within the global

community, which socialises its members as "environmental responsible".

The empirical finding that the frequency of national adoption regularly rises when transfer became institutionalised at an international level suggests that policy convergence by diffusion may not only be motivated by considerations of efficiency-improvement, but instead or additionally by considerations of generating legitimacy.

Considering these dynamics within the international system it can be assumed that national policy-pioneering with respect to global environmental problems may induce the following of other nation states. Global convergence in approaching common problems therefore may be caused by diffusion of national environmental policy innovations, supplementary or in additions to traditional types of global convergence by international negotiations. The impact of policy diffusion on substantial policy change will mainly depend on national factors that determine success or failure of transferred policies. But this is the truth for both mechanisms of global governance—diffusion and negotiated international agreements.

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Is There a Role for EU Integrated Product Policy (IPP) in Solving Global Environmental Problems? Investigating IPP's Capacity for Correction at Source in a Global Context

by Lydia Illge, Klaus Hubacek** and Stefan Giljum****

In its 'Strategy for Sustainable Development', the European Commission (EC) refers to the fact that economic activities within the EU borders increase the pressure on the environment in other parts of the world, particularly in so-called developing countries, through imports of natural resources and exports of waste (European Commission 2001). In its statement, the EC points to another dimension of global environmental problems that have been typically associated with diffuse emissions into air and water. Now, environmental problems formerly labelled 'regional' are conceived to be globally related as well.

The phenomenon described by the EC is closely linked to that of economic globalisation—a historical process of increasing integration of economies around the world. Even though various differing opinions are held by economists on the actual extent and the consequences of globalisation today (both on the society and the natural environment), it seems to be generally acknowledged that production and consumption processes of products are increasingly intertwined on a global level.

At the same time, the OECD states "[...] a growing awareness that the traditional environmental policy focus on production processes may no longer bring about the needed changes to protect human health and the environment." (OECD 2001, p. 18). Based on these insights, the concept of Integrated Product Policy (IPP) was developed in the 1990s, primarily in Europe. IPP is an environmental policy approach aimed at reducing the environmental impacts of products along their entire life cycle.

The goal of this article is to analyse whether a European IPP can contribute to solving at their source the world-wide environmental problems associated with products consumed in the EU but produced in various parts of the world. The article is organised as follows: In referring to empirical data on the industrial metabolism of the EU, section 2 describes the notion of an increasing global division of labour between the EU and the rest of the world and points to its environmental effects. Starting from this problem outline, section 3 gives a brief overview of the IPP concept and its current state of development and presents four aspects of the environmental policy principle of 'correction at source'. This principle will be used in a more detailed analysis of IPP in section 4. In investigating conceptual ideas of IPP and general mechanisms of suggested instruments, section 4 pays special attention to their global effects. Section 5 draws conclusions for designing effective sets of policy instruments for tackling product-related global environmental problems at their roots.

The connection between global environmental problems and the industrial metabolism of the EU

Industrial metabolism is a model describing the material interrelations between the economy and the natural environment (Ayres 1989). The model points to the similarity between natural and economic metabolic processes, seeing the economy as an embedded subsystem of the environment which—similar to living beings—is dependent on a constant throughput of materials and energy. The following aspects of the EU industrial metabolism are of concern to this article: (1) raw materials, water and air are extracted from the natural environment both inside and outside the EU to be transformed into products at various locations around the world; (2) the products are consumed in the EU where they are finally returned to the natural system as diffuse emissions and waste.

In order to discuss the question of global environmental consequences of products in the EU, we first present current trends of the industrial metabolism of the EU, focusing on its trade relations and associated material flows. From this, general conclusions on the resulting world-wide environmental implications are drawn.

A physical input-output study on the external trade relations of the EU-15 region (Giljum and Hubacek 2001) shows that imports almost equal exports in monetary terms, but largely exceed them when measured in tons. In 1999, the European Union had an

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overall net import of almost 1 billion tons of abiotic and biotic materials from outside its territory (figure 1). Thus, the EU economy is highly interrelated with the rest of the world, both in monetary and physical terms. In particular, the EU is heavily dependent on material inputs provided by other world regions.

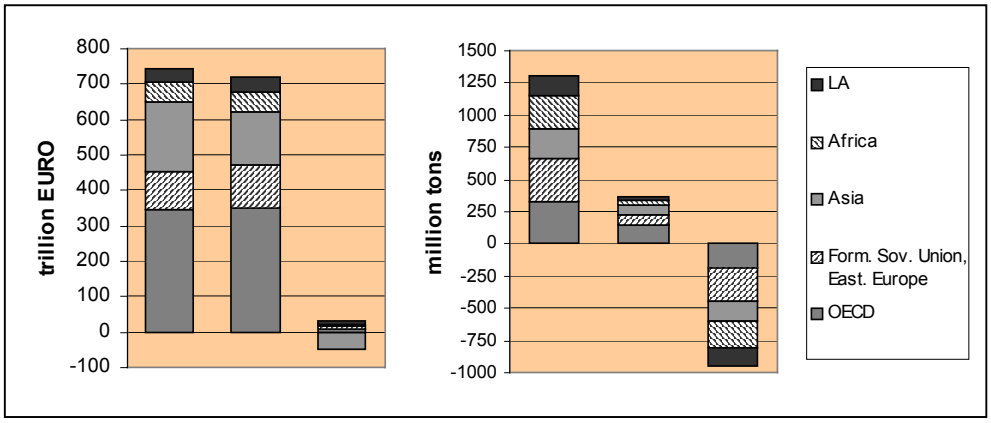

Figure 1: EU-15 imports, exports and trade balance in Euro (left) and tons (right) by world regions. Source: Giljum and Hubacek 2001

Figure 2 disaggregates EU imports and exports by world regions and product groups. According to the figure, the trade deficit of the EU in physical terms (tons) is mainly due to the import of large amounts of fossil fuels (around 60% of all imports) as well as abiotic raw materials and semi-manufactured products (together around 20% of all imports). EU exports (in tons) to all major world regions are dominated by abiotic manufactured products, followed by abiotic raw materials and semi-manufactured products.

A study on the total material requirement (TMR) of the EU over time shows that the contribution of domestic materials to TMR fell since 1986 and accounted for 61% in 1997, whereas from 1983 to 1997 foreign TMR per capita in EU-15 rose from 13 to 20 tons per capita (Bringezu and Schütz 2001). Thus, an overall trend of increasing material imports of the EU from other countries can be observed. The increasing shares of foreign materials were mainly caused by imported minerals, especially by resource demand for precious metals, which induce substantial flows of unused materials from mining due to low concentration levels of the original ores.

However, the environmental consequences of EU material imports have not been analysed in a detailed and comprehensive way. Yet, it can be assumed that large environmental impacts arise from resource extraction and production in regions outside of the EU resulting in land use change and with it deforestation, loss of bio-diversity and various types of emissions—causing environmental costs for these regions.

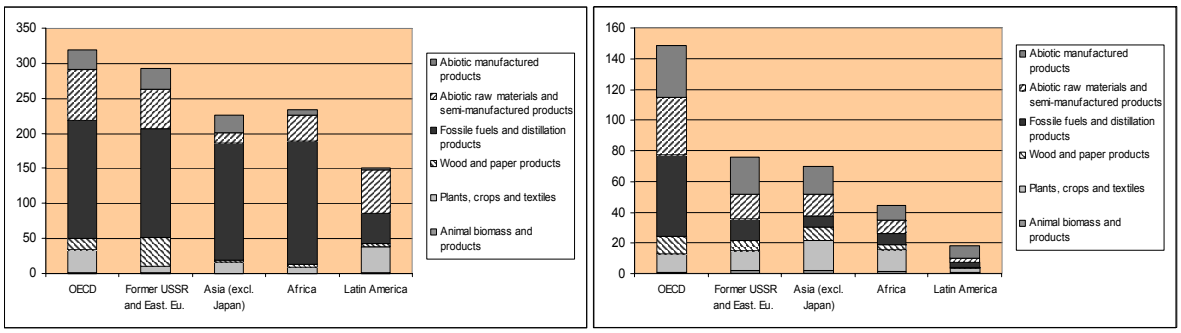

Figure 2: EU-15 imports (left) and exports (right) in 1999 by world regions and product/material groups (in millions of tons), Source: Giljum and Hubacek 2001.

To summarise the above, the empirical data presented in this section underline the fact that the EU economy is closely linked in various ways to other parts of the world, one of them being the import of large amounts of resources and semi-manufactured goods. Even though the EU again exports a lot of final goods that were produced from the imported materials and product components, EU consumption still has a strong impact on the environmental quality of those non-EU countries involved in resource extrac-

tion and production processes. Thus, if it is the goal of IPP to reduce the environmental impacts of products along their entire life cycle, its policy measures have to affect not only production and consumption activities inside the EU but also production in non-EU countries.

Integrated Product Policy and 'correction at source'—an overview

Concept and state of development of Integrated Product Policy

Integrated Product Policy (IPP) puts an emphasis on the product as a source of pollution and resource overuse and has the goal of reducing the life-cycle environmental impacts of products (European Commission 2001a). Rather than representing completely a new policy approach, IPP is a new umbrella concept for a variety of product-related policy instruments, of which a number are already in existence (for example, the EU Directives on Packaging and Packaging Waste [1994] and on End-of-Life-Vehicles [2000]). However, comprehensive product-oriented policy concepts have been developed only in a few European countries, the first being the Netherlands and Denmark, followed by Sweden, Finland, Austria and Germany (Ernst and Young 1998).

The development of an EU-wide IPP started in the late 1990s with support of the EC. In 2001, the EC adopted a Green Paper proposing a strategy to strengthen product-related environmental policies on the EU level, and providing a framework regarding policy concepts of EU member states (European Commission 2001a). On this basis, the EC is now creating a White Paper on IPP to propose in more detail specific measures to be taken (European Commission 2001b).

IPP is generally described as being integrated, product life cycle oriented, and market based; these characteristics are explained briefly in the following. IPP is integrated in two ways: first, in considering entire product life cycles as well as all environmental categories (water, air, soil) at a particular product life cycle stage in policy design; and second, in attempting to integrate aspects of environmental quality in economic policy making (European Commission 2001a). Regarding the second aspect, IPP is closely related to industrial policy and is expected to lead towards producing environmental-economic win-win solutions. Thus, it harmonises with the 'ecological modernisation' and 'green industrial restructuring' discourses (e.g. Dryzek 1997, Binder et al. 2001)—both representing aspects of a desired overall industrial development driven by innovation towards more environmentally sound production and consumption patterns. Against this background, strategies to promote green innovation are explicitly pursued in order to establish leader positions for EU businesses in green products markets (European Commission 2001a).

With its product life cycle orientation, IPP is different from earlier approaches of environmental policy that have a focus on individual production processes and environmental categories (for example air, water). Thus, IPP may prevent the problem of 'shifting' environmental problems from one environmental category or stakeholder to another. Market forces provide the basis for developing incentive-based policy instruments (e.g. product taxation) that will affect both supply and demand—directing them towards greener products. However, the major focus of IPP is on improving the existing market conditions towards, for example, a more competitive market structure (thus, fostering innovation); better access for all market participants to widely available information; clearly assigned property rights and responsibility; and unified EU-wide regulations.

Four approaches to the environmental policy principle of 'correction at source'

The principle of correction at source is expressed in the Treaty establishing the European Community (Article 174 (2) TEC), stating that "environmental damage should as a priority be rectified at source." However, no specific explanation is given for what should be understood as 'source.' For the purpose of investigating IPP in a global context, interpretations from four perspectives seem to be beneficial. We label them the *industrial metabolism, monetary incentive, policy integration* and *spatial approaches,* explaining them in the following.

(a) Industrial metabolism approach

Analysing the material flows which constitute the industrial metabolism of the EU shows that the sources of environmental damage include a variety of economic sectors located both inside and outside the EU (see section 2). Thus, in solving the related worldwide environmental problems at their source, economic agents at all these locations are to be affected by policy measures.

The industrial metabolism model illustrates the prevention-based interpretations of the principle of correction at source by von Seht and Ott (2000) and the Council of the European Union (2001). Von Seht and Ott state that negative environmental effects

should be prevented at the earliest possible stage. They argue that it is generally more efficient (from a society's point of view and in the long run) to invest, for example, in cleaner production technologies and greener product design than to take an 'end-of-pipe' approach and clean up environmental damage resulting from inadequate production technologies and product characteristics after the fact. Similarly, from an ecological perspective, it seems logical that less environmental harm will be generated if—partly irreversible—damage can be avoided rather than cleaned up. The same approach seems to be taken by the EU Council in claiming that preventive measures should be stimulated at an early stage of the product chain and that a transfer of environmental impacts from one life-cycle phase or stakeholder to another should be avoided (EU Council 2001).

However, since the sources of environmental problems are typically spread over all stages of the product life cycle (and industrial metabolism), the focus should be not only on the early but on all stages to achieve most effective solutions. Perhaps, the proposed emphasis on early stages may be explained by the fact that past and present environmental policy and economic decision making has been overwhelmingly focused on end stages and outputs (solid and diffuse emissions); in the eyes of von Seht and Ott and the EU council, this may have to be 'balanced out' now by a stronger input orientation.

(B) MONETARY INCENTIVE APPROACH

A way to implement the principle of correction at source can be seen in the polluter-pays-principle of environmental policy. If a polluter has to pay for environmental pollution (for example through a tax) there is a direct incentive for him/her to either avoid or reduce the polluting activities. On the contrary, if the society as a whole pays for the environmental damage, the individual polluter has no such incentive.

Economists typically favour the polluter-pays-principle because it is market-based by using the market forces through price incentives and, in this way, is expected to lead to efficient methods of environmental protection. In other words, it is expected that the polluter will choose the most efficient way of reducing the pollution. However, this presupposes well-working market mechanisms (for example, no monopoly power) and readily available information for all economic agents. For instance, it should be possible that the polluter can be identified and reached by the incentive-based instruments that it can be calculated how much (for example, of a tax) the polluter has to pay, and that the polluter is able to decide on the most efficient way to reduce pollution. Since some of these circumstances are hard to find in reality, decisions of economic agents will not be 'optimal' both from an economic and environmental perspective.

(C) POLICY INTEGRATION APPROACH

Searching for the sources of environmental damage not only leads to different views on economic activities (such as the industrial metabolism and monetary incentive approaches) but also to the political domain, that is, to the non-environmental policy areas with large environmental impacts (for example, on transportation, industrial development, agriculture, regional development). Here, the policy principle of integration is of particular importance for tackling environmental problems at their source. 'Integration' refers to the non-environmental policy areas in which environmental aspects should be considered right from the beginning and not discriminated against other policy concerns (Article 6 TEC, von Seht and Ott 2000).

The process of political integration in the EU—also known as the 'Cardiff-process'—is also a key principle of sustainable development in that the mutual interdependency of environmental and economic aspects is considered. This aspect is acknowledged by the EC as well in its attempts to develop an EU-wide strategy for sustainable development (European Commission 2001).

(D) SPATIAL APPROACH

Considering that the EU economy is highly interrelated with other regions of the world through material flows (see section 2), the location of economic agents along the stages of a product life cycle becomes particularly important. For our purpose of investigating an EU policy concept, it matters especially whether the economic agents are located inside or outside the EU. The spatial aspect adds a number of difficulties to the practical implementation of the above (industrial metabolism, monetary, and policy integration) approaches. For instance, information may be missing on where the pollution occurs and who the polluters are. Consequently, policy instruments aimed at promoting co-operation among producers (and other agents such as the government) and instruments based on the polluter-pays principle may require large efforts, e.g. in monitoring and assessment.

Detailed analysis of IPP with respect to correction at source in a global context

ANALYSIS OF IPP USING THE INDUSTRIAL METABOLISM APPROACH

IPP is based on an integrated view on all stages of the product life cycle. A product life cycle may be understood as an aspect of the industrial metabolism: whereas the industrial metabolism model is concerned with material flows of an entire economic system, a product life cycle refers to only one individual product. However, the product life cycle model exceeds a representation of material flows in being two-dimensional: whereas the material (or 'ecological') life cycle contains all stages from resource extraction to waste disposal/recycling, the 'economic' life cycle refers to all stages from product idea to market decline (Rubik et al. 2000). Thus, a wide range of economic agents representing the various product life cycle stages need to co-operate in order to develop integrated solutions for 'greener' products.

However, given the high complexity of a product life cycle oriented policy approach, large amounts of information are needed, and the government may have only a limited ability to successfully 'steer' economic activities. Therefore, IPP considers the government as only one of the stakeholders related to environmental protection (including, for instance, businesses, research institutes, and environmental and consumer protection organisations). The stakeholders are invited to participate in designing IPP policy measures and developing ways to implement them, whereas the role of the government is to mediate stakeholder co-operation and create a business environment that promotes environmentally-sound economic development and allows room for innovations in various directions. In this way, IPP follows a general trend of environmental policy that favours voluntary/co-operative and informational policy instruments. Some of these instruments are investigated further in the following discussion.

A major challenge for governments implementing IPP is to promote 'life cycle thinking' (i.e. thinking about the effects of one's productive/consumptive activities at other stages of the product life cycle) and co-operation of stakeholders. One way of establishing co-operation is the Danish approach of 'product panels,' that is, groups of stakeholders along the life cycle of a product or product group co-operating in the development of 'greener' products (European Commission 2001a).

Considering a large number of product life cycles exceeding national boundaries, the question is first whether and how to include foreign stakeholders in the panels. Although discussions are still going on, there seems to be no intention to create product panels on the EU level. Instead, the panels are promoted on the national level (Ernst and Young 2000). In this case, important stakeholders (for example, producers) located outside of the EU may be missing in the panels, thus making it impossible to include all sources of environmental damage in the development of solutions. But does it seem possible at all to establish global product panels? Although modern information technologies make such a 'global co-operation' easier then ever before, there is a lack of knowledge on how to use the communication means and of foreign language skills amongst small businesses. Also, information technologies cannot completely replace face-to-face communication. Therefore, without governmental support, the approach may be limited to big businesses having the capacities for international business co-operation.

To sum up, in principle, the instrument product panels provides an approach to tackling product-related environmental problems at their sources. In practice, even though it may be easier to implement the panels on the regional and national level, they may in this way leave out important sources of environmental damage. Thus, global product panels may provide an option to be pursued and developed further, particularly due to missing alternative means for establishing co-operation along global product life cycles.

Two types of product-related voluntary agreements may be distinguished. The first type is one negotiated between government and industry on, for instance, take-back of end-of-life products, recycling or reuse quota, or the banning of environmentally-harmful substance in products. The second type represents agreements on product standardisation, typically concluded by business associations and governmental standardisation agencies.

At the present, a number of voluntary agreements exist on the national level. Thus, their direct effects are restricted to the individual country as well. However, their indirect effects exceed national boundaries if, for instance, businesses no longer import environmentally-harmful raw materials and semi-manufactured products as a result of wanting to ban a certain substance in products. Yet, voluntary agreements are of particular importance (and partly existing) also on the international level—both within and beyond the EU. Major issues to be agreed on internationally (ideally: globally) are product and production standardisation to be negotiated between national governments and agencies of the various countries of the world. In this way, efforts in developing greener

products, e.g. through product recycling or reuse, will be both more economically efficient and environmentally effective.

In promoting information generation, processing and availability, informational instruments help identify the sources of product-related environmental damage. Instruments supportive of generating environmental information include promoting the development of assessment methods such as Material Flow Analysis (MFA), Physical Input-Output Analysis, and Life Cycle Analysis (LCA). In order to express product-related information in an easily interpretable form (in order to support decisions of various economic actors), widely accepted eco-labels may be created and promoted. To make information broadly accessible, information agencies, public Internet-based databases and other forms of publications can make large contributions. All of these measures are taken—and needed—both on the EU level and in member countries. However, against the background of global production and consumption, these instruments are also needed on the global level to involve all stakeholders.

ANALYSIS OF IPP USING THE MONETARY APPROACH

The concepts of 'product' (or 'producer') 'responsibility', also named 'extended producer responsibility',[108] provide the basis for a group of incentive-based instruments that are to be part of IPP. The monetary rationale of the concepts is that in extending the producers' responsibility, e.g. to the post consumer stage of a product life cycle, formerly external costs (e.g. for disposal or recycling) are internalised into the private costs of producers. In having to consider these—partially environmental—costs, producers have an incentive to developing efficient solutions to reducing the costs.

Thus, the main idea of product responsibility is to make producers financially responsible for the environmental effects originating from their products all along their life cycle. One option for establishing product responsibility is to introduce tack-back obligations for end-of-life products; another option is to raise a product tax, thus, internalising the external environmental costs of production and (partly) consumption into the private costs of the producer. Both these instruments are investigated in more detail below.

The instrument requires producers to take back the products (or packaging) they produced after consumption. They can, however, chose between doing this either individually or by joining a 'producer responsibility organisation (PRO)' that will organise the take-back and prepare the end-of-life products for reuse, recycling, and disposal. Since an individual take-back over long distances will be neither economically nor environmentally favourable, particularly for product life cycles with global dimensions, making membership to a PRO allows these take-back regulations to be manageable. Thus, foreign producers will typically participate in a domestic producer responsibility organisation just like most domestic producers. In this way, a take-back obligation includes both domestic and foreign producers equally. This presupposes, however, that producers can be identified and 'free rider' behaviour (that is, using the take-back infrastructure without paying for it) can be avoided.

Take-back obligations may refer to various kinds of end-of-life products and packaging. They have been introduced in the EU, for instance, for end-of-life vehicles and are planned for electrical and electronics equipment. A general shortcoming of take-back regulations is that they can rarely be installed for all products, primarily due to the required infrastructure and large efforts for selecting and recovering the end-of-life products.

There are a number of (interrelated) options for businesses on how to react to a take-back obligation, including recycling, waste incineration and the development of better recyclable materials and reusable products and less waste generating service and product concepts. Thus, take-back obligations have the potential of influencing various stages of the product life cycle. Which of these options will be used by businesses, however, depends on a number of aspects, including (private and environmental) costs associated with the options, technological innovations, and the information available on the effects of the options on the market and the environment. Therefore, the aspects of internalising environmental costs and fostering eco-innovation appear to be largely influential on the success of take-back regulation—presuming the goal of solving environmental problems at their source. Consequently, other instruments are needed to complement take-back obligations (for example environmental product taxation, see later in this section; informational instruments, see section 4.1).

All consequences along the product life cycle considered, these above mentioned options of reacting to a

[108] All three names appear throughout the literature representing similar approaches differing in their scope (e.g. whereas some approaches only refer to take-back obligations, others also include taxation) and major focus (e.g. the product focus also refers to consumers whereas the producer focus does not).

take-back obligation will have varying environmental impacts with regard to resource use, pollution and waste generation—not at least depending on available technologies. Thus, governmental promotion of 'green product' research and development can make take-back obligations more environmentally effective. Moreover, each of the options above faces a number of difficulties—even more so considering the global division of labour. The problems of joint product development were already indicated for product panels (see above in this section). Considering the option of recycling, economic and environmental problems result, for example, from the various kinds of materials that have to be either collected separately or divided after collection for the recycling processes. These processes are typically associated with high costs and an unsatisfactorily low degree of separation. If materials, product components or packaging are imported, additional difficulties may arise, for example, from problems with recycling materials and missing information on the materials (risk of toxic components in secondary materials). Thus, the seemingly paradox situation may occur in some cases that incineration turns out to be the less costly and less environmentally harmful alternative to recycling.

The problems described thus far point toward the importance of global co-operation of stakeholders along the product life cycle and of global standardisation agreements (for example, on the use of materials and their declaration). Without the supportive framework of these global measures, effects of take-back obligations in the EU will be limited in affecting the sources of environmental damage along product life cycles.

The rationale of environmental product taxation is based on the assumption that the environmental performance of products can best be optimised by the market forces once all prices reflect the 'true environmental costs' of products during their life cycle (polluter-pays principle). Consequently, the external costs should be included in the private costs of producers and consumers by, for example, establishing environmental taxes. Environmental product taxes are, however, rare in reality—one of the few examples being a component of the German 'eco-tax' raised on gasoline). A major reason for this is the fact that taxes typically lack acceptance by all producers and consumers since they seemingly generate an additional financial burden.

The following rationale for taxation in the IPP Green Book may be seen against the background of a possible cost disadvantage for the taxed producers and the resulting low acceptability. It is argued that since initiatives by economic actors to reduce environmental harm will lower the financial burden on the society, they should be rewarded, for example, by lowering (already existing) taxes. In particular, the EU IPP concept suggests to differentiate the value added taxation throughout the EU according to whether a product meets the criteria of an 'eco-label' or not (European Commission 2001a).

The approach raises a number of questions regarding its practical implementation. However, since an eco-label typically combines various environmental aspects in an aggregated form, it may be concluded that this approach abandons the idea of basing the tax on the external environmental costs that had to be estimated. Rather, the emphasis is on putting a differentiated tax burden on more or less environmentally sound products.

This approach will very likely increase the recognition of eco-labels. In particular, it may be expected that the labeling criteria will be a core object of concern. This would also intensify the need to further developing eco-label concepts and, in particular, methods to analyse and compare the environmental impacts resulting from various products. In addition, since the value added tax sets a clearly noticeable price signal to the consumer, the role of consumer decisions is highlighted by this instrument.

Analysis of IPP using the policy integration approach

The focus of IPP on the economic category 'product' leads to an important aspect of environmental policy design: in aiming at improving the environmental performance of products, aspects of industrial and other forms of economic policy become the central political categories. From this insight, the need for integrating environmental and economic policy issues is derived in the European IPP concept (Ernst and Young 2000, European Commission 2001a). If the goal of this development is defined as implementing economic policy instruments in the most environmentally effective way, policy integration should be particularly welcomed from the following point of view: it embodies the chance of tackling environmental problems at a political source—through correcting economic policy that is supporting environmentally-harmful activities. There is a major challenge for governments lying in policy integration since co-operation has to be created across established fields of policy responsibility, e.g. various ministries).

However, if environmental and economic problems are solved jointly in the attempt to develop mutually beneficial solutions there is the risk of achieving second-best results if win-win solutions are primarily

pursued from a short-term economic perspective. This is a likely development in practice since short-term solutions (e.g. to promote recycling without changing product design) will be easily agreed upon. Yet, more sustainable solutions may be achieved from a long-term perspective, e.g. in pursuing innovation leading to improved recycling processes and better recyclable products. In addition, in orienting toward potential market advantages for EU businesses, IPP puts an emphasis on economically favourable instruments such as on voluntary/co-operative (e.g. EU-wide standardisation of product components). The expectation of business advantages may lead to a preferred application of these instruments only on the EU level. However, global product-related standardisation agreements will be more sustainable from a global perspective than EU agreements. Thus, the economic goals from an EU perspective may be opposed to global environmental goals. However, long-term and global approaches may also require large efforts and sometimes even be not achievable in a reasonable time scale.

Favourable economic effects of IPP are also used as a major argument to convince businesses in the EU to engage in IPP development and implementation (EU Commission 2001a). Since eco-innovations of EU businesses may generate market advantages for them, an economic incentive is seen for businesses to participate in IPP initiatives. However, this 'mix' of environmental and economic motives held by both the government and businesses is hard to always assign clearly. Thus, IPP may be viewed by outside-EU countries as an attempt to protect the EU domestic market against the rest of the world rather than to solve environmental problems. Since this problem is a major source of disagreement between industrialised and developing countries within WTO negotiations, IPP may add another point of controversy to this discussion.

Conclusions

Considering the fact that the EU economy is closely linked to the rest of the world in various ways, environmental problems formerly labelled 'regional' are now conceived to be global as well. In particular, the EU's heavy dependence on foreign material imports is the reason why products consumed in the EU can be assigned environmental damage related to resource extraction and production in other parts of the world. Thus, economic globalisation changes the context of product-based environmental policy.

Particularly in view of achieving sustainable development, the implication for EU Integrated Product Policy is that life cycle thinking of policy makers, producers and consumers in the EU cannot stop at the borders of member countries or the EU domestic market. Otherwise, environmental problems may be tackled at their sources only in so far as they are located within the EU domestic market. It is even possible that environmental problems may be shifted towards the non-EU countries by decisions of policy makers and economic agents who do not take into consideration the global effects of EU consumption.

The IPP concept and the instruments under investigation in this article confirm that IPP, as proposed by the EU, embodies the potential for improving the environmental performance of products along their global life cycles. However, this potential can only be realised if the following two aspects are taken into consideration by policy makers. First, sets of instruments should be developed rather then focusing on individual instruments in order to improve their effectiveness. For example, take-back obligations will only result in most environmentally-sound solutions if they are complemented by other instruments such as environmental product taxation, promotion of information agencies, and product panels.

Second, whereas some incentive-based instruments implemented on the EU level, such as take-back obligations and differentiated value added taxation, can affect producers world-wide—voluntary/co-operative and informational instruments need a global approach in order not to limit their effects to the EU territory. Taking the above example of take-back obligations again: implemented on the EU-level, the instrument can establish product responsibility amongst producers world-wide. However, global agreements on standardised labeling of product components and final products will support the identification of producers. In addition, globally linked information agencies and product panels will be supportive of an environmentally efficient take-back obligation and include the foreign sources of environmental damage. In this respect, an essential precondition for successful co-operation, particularly on the global level, is that a new understanding is created for all stakeholders of what is economically desirable—based on a long-term perspective. To implement this basic principle of sustainable development may require an extensive process of learning by all stakeholders.

The strong orientation on the business advantages arising from IPP instruments may lead to a reduced view on IPP instruments favouring their application only within the European domestic market. Particularly with respect to sustainable development, these

potentially problematic issues should be addressed in the process of further developing IPP by the EU. Overall, both short- and long-term as well as EU-wide and global policy approaches will have to be valued against each other and, ideally, combined in order to develop most effective and sustainable IPP sets.

To implement IPP, large amounts of information are needed by governments as well as businesses, consumers and other stakeholders (for example, environmental organisations) to support their decisions—be it on policy measures, production methods or purchase of goods. This information includes data on the environmental and economic effects resulting from products and product groups, from economic strategies (such as recycling, dematerialisation, reduction of toxic components), and from the IPP instruments. Indeed, in order to enhance the success of IPP, it will be a major task to promote not only EU but also world-wide data generation, to support the development of analytical methods, and to make the information available world-wide.

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Part III

Rethinking National Sovereignty and Global Environmental Change

Global Environmental Change and the Nation State: Perspectives of International Law

*by Peter H. Sand**

All revolutions have their iconoclastic phase.[109] When international lawyers first embraced the global environmental revolution—looking for icons to smash—they were eager to pick on the nation state as a target: Not surprisingly perhaps, much of the early literature on international environmental law and governance started from a radical *critique* of territorial sovereignty, suspected to lurk at the roots of many transnational environmental problems (Falk 1971, 222; Caldwell 1973, 200);[110] and from high hopes for an "erosion" or "perforation" of operational sovereignty, as the preferred solution to those problems.[111]

Reality turned out to be different, or so it seems. Not only did state sovereignty prove its resilience as an organising element for the post-Stockholm 1972 and post-Rio 1992 global ecological order.[112] Quite paradoxically, two of the most momentous recent developments in the world-wide codification of natural resources law resulted in a net expansion of national jurisdiction: First, the UN *Convention on the Law of the Sea* (LOS 1982, art. 56) formally extended the sovereign rights of coastal states to the vast new area of "exclusive economic zones", estimated to contain 25% of global primary production and 90% of the world's fish catch (IWCO 1998, 59; Eckert 1979; Attard 1987; Orrego Vicuña 1989; Hoel 2000). Ten years later, the UN *Convention on Biological Diversity* (CBD 1992, art.15) extended sovereign rights to the even vaster range of plant and animal genetic resources, thereby enclosing access to another major chunk of what had once been considered "heritage of mankind" (FAO and IU 1983, art. 1; Bordwin 1985; Wolfrum 1996). And most recently, the *International Treaty on Plant Genetic Resources for Food and Agriculture*, adopted in Rome on 3 November 2001, bluntly put an end to that legal fiction: "In their relationship with other States, the Contracting Parties recognise the sovereign rights of States over their own plant genetic resources for food and agriculture, including that the authority to determine access to those resources rests with national governments and is subject to national legislation" (FAO and IT 2001, art. 10/1).

So is the pendulum swinging back to the other extreme—to that "formidable defensive concept" (Allot 1989, 17) of permanent sovereignty over natural resources (Schrijver 1997; Chimni 1998), and its notorious "obsession with territory" (Scelle 1958)? I do not really think so. True, the new treaty language seems to acknowledge that states can have their "own" genetic resources, in the way in which the UNESCO *World Heritage Convention* recognised cultural and natural heritage sites as "property, to whatever people they may belong".[113] Yet the reference to ownership and property rights introduces an analogy to private property law here that is potentially misleading (Carty 1986, 44). Just as the sovereign rights of coastal states in their maritime exclusive economic zones are qualified by specific obligations owed to other states and to the international community (LOS 1982, arts. 61-70), the sovereign rights of "countries of origin" over access to genetic resources *in situ* are matched by an obligation to facilitate access for other Parties to the Biodiversity Convention (CBD 1992, art. 15/2), by the catalogue of conservation duties spelled out in the Convention (arts. 5-14), and by the "multilateral system" established under the Rome Treaty (FAO/IT 2001, art. 10/2).

In both instances, such limitations on sovereignty have been justified by community interests designating certain areas or resources as a matter of "common concern"[114], not withstanding the fact that—unlike "common heritage" in the global commons *outside* national jurisdiction, such as deep-seabed or

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110 But see Falk 1995, 11: "I now believe that this earlier analysis was badly mistaken in several key respects."

111 Falk 1975, 2; Mayer-Tasch 1985; Brown Weiss 1993, 710; Caldwell 1996, 331; Riedel 1997, 277; Hinds 1997; Odendahl 1998; van der Lugt 2000; and generally Jenks 1969, 133; Czempiel 1969; Camilleri and Falk 1992, 185; Schreuer 1993; Henkin 1994; Krasner 1999.

112 Haas and Lundgren 1993; Conca 1994; Beyerlin 1995; Agius 1998; Haedrich 2000; Perrez 2000; and generally Reisman 1997; Schrijver 2000; Kreijen 2001; Werner and de Wilde 2001.

113 UNESCO 1972, fifth preambular paragraph. On the evolution of "national" vs. "common" heritage concepts for cultural property see Williams 1978; Merryman 1983; Schorlemer 1992; and Genius-Devime 1996.

114 Brunnée 1989; Attard 1991; Simma 1994; Biermann 1996; Kiss 1997; Kornicker 1997, 157; Kornicker-Uhlmann 1998; Durner 2001, 234.

outer-space areas (Pardo 1975; Gorove 1972; Pinto 1996; Buck 1998; Vogler 2000; Joyner 2001)—they may be situated squarely *within* the territorial boundaries of states. Given those built-in restrictions, however, the analogy to "ownership" rights becomes so diluted as to evoke a different legal analogy altogether: i.e., the role of the nation-state becomes more akin to a kind of *public trusteeship*—an idea which has indeed been gaining ground in modern environmental law, and on which I will now focus.

The message is simple: The sovereign rights of nation-states over certain environmental resources are not proprietary, but *fiduciary*. I will show this by reference to comparative environmental law, to so-called "stewardship economics", and to public international law.

The public trust in comparative environmental law

The concept of public trusteeship for environmental resources has undergone a spectacular revival in the United States. A rather obscure, century-old Supreme Court case (Illinois Central Railroad vs. People of the State of Illinois 1892), rediscovered by a perceptive law professor (Sax 1970; ELQ 1998), became the starting point for a whole generation of innovative environmental law-making—from Michigan's Environmental Protection Act of 1970 to federal legislation such as the "Superfund" Act of 1980 and the Oil Pollution Act of 1990, and reflected in new constitutional provisions; for example, art. 1 §27 of the Pennsylvania Constitution (as amended on 18 May 1971; Dernbach 1999) now reads:

> Pennsylvania's natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of the people.

What, then, is the idea of environmental trusteeship (Rose 1986; Johnson 1989; Dunning 1989; Slade 1990)? In very simplified language, it means that

(a) certain natural resources—e.g., watercourses, wildlife, or wilderness areas—regardless of their allocation to public or private uses are defined as part of an "inalienable public trust";

(b) certain authorities—e.g., federal agencies, state governments, or indigenous tribal institutions—are designated as "public trustees" for protection of those resources;

(c) every citizen, as "beneficiary" of the trust, may invoke its terms to hold the trustees accountable and to obtain judicial protection against encroachments or deterioration.

The public trust doctrine is now well-established in US environmental law, albeit not uncontested—partly because of its manifest reliance on property concepts (Lazarus 1986; Delgado 1991; Ryan 2001). Even though its origins are claimed to go back to ancient Roman law, most of its methodology and terminology is essentially derived from the Anglo-American common law of charitable trusts, under which all beneficiaries are entitled to hold a trustee accountable (Kötz 1963, 63; Chesterman 1979; Sheridan 1981, 21). Simultaneously, and initially modelled after Britain's *National Trust for Places of Historic Interest or Natural Beauty* (1894, confirmed by legislation since 1907; Dwyer and Hodge 1996), the "land trust movement" to preserve strategic natural areas for the community—conservancy by charitable title acquisition—has since spread throughout North America (Davis 1987). While courts in some common-law countries like Australia and Canada have been more reluctant to extend the environmental scope of trusteeship (Bates 1995, 70; Maguire 1997; Tigrestrom 1997; Romy 1997, 44), it found enthusiastic reception in others—witness art. 2 of the Philippine Environmental Policy Decree of 1977, which proclaimed "the responsibilities of each generation as trustee and guardian of the environment for succeeding generations" (applied to the conservation of public forests in a widely quoted Supreme Court case, Minors Oposa vs. Factoran 1993; Allen 1994, La Viña 1994); Eritrea's Environment Proclamation of 1996, which designated the state as "custodian for the harmonised and integrated management and protection of the national environment and the sustainable use of natural resources" (art. 5); and India, where the Supreme Court in a landmark decision declared the public trust doctrine "a part of the law of the land" (Mehta vs. Kemal Nath 1996, followed in two 1999 Supreme Court cases; see Deepak Singh 1999, and Razzaque 2001).

Even more striking are similar developments in the environmental legislation of continental European countries, where the common law trust is *not* part of a national legal tradition (Helmholz and Zimmermann 1998). In Sweden, for example, the Royal Academy of Sciences—and since 1964, the Nature Conservation Board—has been designated as public trustee for protected natural areas (Hillmo and Lohm 1997); in Italy, the Court of Accounts (*Corte dei Conti*)—and since 1986, the Environment Ministry—acts as trustee for claims of damage to national heritage (*danno erariale*) in the field of natural resources that would otherwise remain without procedural representation (Bianchi 1997).

There are many historical precedents for the transnational diffusion of law, a cross-cultural process sometimes described as *mimesis* (Toynbee 1961, 343), and similar to the spread of innovative technologies—or contagious diseases (Hägerstrand 1967; Gould 1969).[115] In the words of Roscoe Pound, former dean of Harvard Law School, "the history of a system of law is largely a history of borrowing of legal materials from other legal systems, and of assimilation of materials from outside the law" (Watson 1993, 22); and as already noted by Max Weber, that kind of reception across national boundaries typically occurs through social elites (*honoratiores*), such as judges and legislators (Rheinstein 1956, 37). Environmental law proved a particularly fertile ground for this "horizontal" transfer of innovative concepts and institutions (Sand 1990, 23; Wiener 2001, 1298), well illustrated by the trusteeship doctrine.

Stewardship economics and common goods

Recent economic literature, under the label of *stewardship economics* (Young and McCay 1995, 94; Page 1997) identifies intergenerational "fiduciary responsibilities" of society with regard to certain resources such as "a fishery, a forest, the Internet, the air, the oceans, the ecological health of a stream, and so on" (Brown 2000, 110; Ciriacy-Wantrup and Bishop 1975, 725; Scott 1999, 154); i.e., a broad range of common goods (*Gemeinschaftsgüter*: Zacher 1993; Engel 1997), "environmental commons" in particular (*Umweltgemeingüter*: Feld et al. 1997; Ostmann 1998), which—depending on criteria of public accessibility or excludability—are categorised either as global collective or "public goods",[116] or as common property or "common pool resources" (CPRs = *Allmende*: Ostrom 1990; IASCP 2000).[117] Besides sociological analysis (Fukuyama 1995; Kramer 1996), current interdisciplinary research—e.g., at the Max Planck Project Group in Bonn on *Common Goods: Law, Politics and Economics* (MPP 2001, 97)—has also focused attention on the economics of "trust" as a general organising principle in social psychology (Ripperger 1998; Engel 1999), which mirrors legal-doctrinal definitions of public trusteeship as "preventing the destabilising disappointment of expectations held in common" (Sax 1980, 187). At the same time, the concept of stewardship has become the hallmark of two international pilot projects—operated by environmental NGOs in co-operation with industry—for the use of economic instruments in natural resource management, in the form of "green" eco-labels for the global marketing of commodities claimed to be sustainably harvested: viz., timber products certified by the *Forest Stewardship Council* in Oaxaca/Mexico (Kloven 1998; Schmidt 1998); and fishery products certified by the *Marine Stewardship Council* in London (Freestone and Makuch 1996, 48). The topic clearly has ceased to be academic: transnational civil society—emerging as a powerful actor in the environmental arena (Mathews 1997; Florini 2000)—is beginning to develop and invoke its own tangible criteria for holding public trustees accountable.

Environmental trusteeship in international law

How far, then, has the idea of public trusteeship for environmental resources progressed in the field of international law? To make things clear, I am *not* referring here to the "trust funds" frequently used as mechanisms to finance international environmental regimes and projects, such as the *Global Environment Facility* for which the World Bank serves as trustee (*GEF*: Sand 1994, 17)—even though their operational experience may also offer useful insights for global environmental governance (Werksman 1995) and for the further transnational harmonisation of legal rules (Gold 1978; Hague Convention 1985). What is at stake here, however—as object of the trust (or *corpus*, in the jargon of trust law), and as object of the rules—are *not* financial assets, but the environmental resources themselves.

The idea of treating at least part of these resources as "inclusive" or "internationally shared environment" (McDougal and Schneider 1974, 1092; Handl 1975; Schneider 1979, 22) has, of course, a long tradition in international law—with regard to resources outside national jurisdiction, from *res communes omnium* to "common heritage" doctrines (Stocker 1993; Baslar 1998); and with regard to certain "internal resources" (Arsanjani 1981), from doctrines of *bon voisinage* to "shared natural resources" (Adede 1979; Barberis 1979). Proposals to make use of the public trust doctrine in an international environmental context date back to the *Bering Sea Fur Seal Arbitration* (Great Britain vs. USA 1893; Romano 2000, 133). They resurfaced during preparations for the 1972 *Stockholm Declaration* (Sohn 1973, 457; Maggio 1997, 203) and

[115] Vindicating Mephisto's metaphor in *Faust I*: "All rights and laws are still transmitted like an eternal sickness of the race, from generation unto generation fitted and shifted round from place to place" (Goethe 1808, 1: IV; as a lawyer, of course, Goethe knew what he was talking about).

[116] Olson 1971; Ostrom 1977; Sandler et al. 1978; Stone 1995; Cornes and Sandler 1996; Kaul *et al.* 1999.

[117] International lawyers tend to use the term "common property" in a different (spatial) sense, to designate *res communes* situated in the global commons outside national jurisdiction only (Wolfrum 1984; Boyle 1997, 83); but see the wider concept of "*domaine public international*" in French legal theory (Scelle 1944, 350).

the *World Heritage Convention* (Gardner 1966, 154; Train 1972), and have since been taken up by a number of international publicists.[118]

Various forms of "trusteeship", "guardianship", "custodianship" or "stewardship" status have thus been suggested for the marine environment in coastal waters and exclusive economic zones[119]); for continental shelf areas 60 to 120 miles beyond the EEZ (US Draft Seabed Convention 1970, arts. 26-28); for marine resources in specific regional seas such as the Mediterranean (Raftopoulos 1992) and the South Pacific (Fong 1993); for living ocean resources in general;[120] for Antarctica (Suter 1991, 170); for the global atmosphere (Taylor 1998, 283); for all global commons (Cleveland 1993; Stone 1993, 83); for rain forests in Latin America (Franck 1989, 541; Tarlock 1997, 65); for freshwater resources in the Middle East (Civic 1998); for genetic resources or biological resources generally (de Klemm 1982, 124; Siebeck and Barton 1992; Mercure 1998, 64; Gebel 1998; FOET 2001); or for all elements of the environment (Kiss 1989, 19; Bosselmann 2001, 22). In two cases dealing with marine resource conservation, the Court of Justice of the European Union declared all member states "trustees of the common interest" (ECJ 1981, §30; ECJ 1987, §15); and in a judgement interpreting the 1979 EU Bird Conservation Directive (EEC 79/409), it considered wild birds "a case where the *management of the common heritage is entrusted* to the member states in their respective territories" (ECJ 1990, 885). More recently, in his much-quoted separate opinion in the 1997 Danube Dam case, Judge Christopher G. Weeramantry of the International Court of Justice referred to a "principle of trusteeship for earth resources" (ICJ 1997, 213; *cf.* Weeramantry 1992, 151).

In July 1997, UN Secretary-General Kofi Annan proposed—in his report on governance reform (UNSG 1997, paragraph 85)—that the United Nations Trusteeship Council

> be reconstituted as the forum through which Member States exercise their collective trusteeship for the integrity of the global environment and common areas such as the oceans, atmosphere and outer space. At the same time, it should serve to link the United Nations and civil society in addressing these areas of global concern, which require the active contribution of public, private and voluntary sectors.

The idea was not a new one. It had first been raised by Maurice Strong—legendary organiser of the Stockholm and Rio UN Conferences—in a 1988 speech to the World Federation of United Nations Associations in Halifax (Strong 1989, 20); and by Maltese Foreign Minister Guido de Marco in his closing address as president of the 45th UN General Assembly in 1991 (Borg 1992; de Marco and Bartolo 1997). Initial reactions were rather sceptical, mainly because changing the mandate of the Trusteeship Council would require an amendment of the UN Charter (Szasz 1992, 362), and earlier attempts at extending that mandate to the Antarctic had failed (Wolfrum 1984, 49). But Strong has a reputation for never taking "no" for an answer, and nobody was surprised therefore to see the idea re-surface in the report of the *Commission on Global Governance*, of which he was a member (CGG 1995, 251), and later in the UN reform proposals (for which he served as consultant)—promptly endorsed by Malta's newly elected Head of State (de Marco 1999, 2001; see also Mann Borgese 1998, 164 and 195).

The 1997 UN report was followed by a note from the Secretary-General on "The Concept of Trusteeship" (UNSG 1998a), which regrettably entrusted the question to the proverbial UN committee: the *Task Force on Environment and Human Settlements*, chaired by the Executive Director of UNEP. The task force report to the General Assembly in October 1998 refrained from making any recommendations on the trusteeship issue (UNSG 1998b; Agarwal et al. 1999, 365; Desai 2001, 486). The buck was eventually passed to the *Open-ended Intergovernmental Group of Ministers on International Environmental Governance* launched by the UNEP Governing Council in February 2001, which predictably referred the matter to expert consultations, held in Cambridge in May 2001; the experts, in their wisdom, concluded that "it would be very difficult to undertake measures that would affect the main organs established by the United Nations Charter, like the ECOSOC and the Trusteeship Council" (Estrada Oyuela 2001, 1). And that, as far as I know, was the last thing heard of the proposal.

So is this just another one of those hair-brained schemes which periodically emerge in our international institutions, only to die a slow "death by committee"? I do not think so; and I believe it is worth taking a closer look at the trusteeship idea, for a number of reasons.

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118 Nanda and Ris 1976; Kiss 1982; Munro and Lammers 1987, 43; Glennon 1990, 34; Kiss and Shelton 1991, 20; Bosselmann 1992, 385; Cho 1995, 332; and Caron 2000, 257), especially in the legal debate on intergenerational equity (Brown Weiss 1984, 1989; Agius and Busuttil 1997; Vibhute 1998, 71; Zanghi 1999; and Redgwell 1999.

119 Beesley 1973, 6; Jarman 1986; Archer and Jarman 1992; Hildreth 1993; Britton 1997.

120 Van Dyke 1993; Mann Borgese 1996; Zharen 1998; IWCO 1998, 45.

Prolegomena of a theory

In spite of the irritant amount of rhetoric surrounding it, the concept of public trusteeship is *not* a mere figure of speech or a utopian scenario, as some commentators and orators seem to assume. To begin with, the concept has respectable philosophical credentials: from the famous statement in John Locke's *Second Treatise on Civil Government* (1685), asserting that governments merely exercise a "fiduciary trust" on behalf of their people (Gough 1973; Dunn 1984; Brown 1994), to the suggestion by Roscoe Pound to limit the role of states in the management of common natural resources to "a sort of guardianship for social purposes" (Pound 1954, 111). That comes remarkably close indeed to Karl Marx:

> Selbst eine ganze Gesellschaft, eine Nation, ja alle gleichzeitigen Gesellschaften zusammengenommen sind nicht Eigentümer der Erde. Sie sind nur ihre Besitzer, ihre Nutznießer, und haben sie als *boni patres familias* den nachfolgenden Generationen verbessert zu hinterlassen. (*Das Kapital*, vol. 3, ch. 46)[121]

It seems to me that this fundamental political dimension of trusteeship is often neglected in purely juridical comparisons between Anglo-American trust law and other legal systems (Schwarz-Liebermann 1951; Kötz 1963; Waters 1995; Helmholz and Zimmermann 1998; Hayton 1999). While it is true that the common law trust has historic parallels in European civil law (going back to the ancient Roman *fiducia* and *fideicommissum*), in the charitable *waqf* of Islamic law (Fratcher 1973, 108) and in the *moramati* of African customary land law (Kenyatta 1978, 32; Ollennu 1962, 4), analogies from private property law have their limits—and can be downright misleading (Carty 1986, 44). In particular, the instinctive inclination of German lawyers to consider the trust as equivalent to the *Treuhand*, with its predominant focus on *bilateral* contractual relations between a settlor (trustor/*Treugeber*) and a trustee (*Treuhänder*: see Coing 1973; Grundmann 1997, 3; Grundmann 1999), has resulted in fatal misconceptions of public trusteeship in the environmental context—which instead is really *trilateral*:

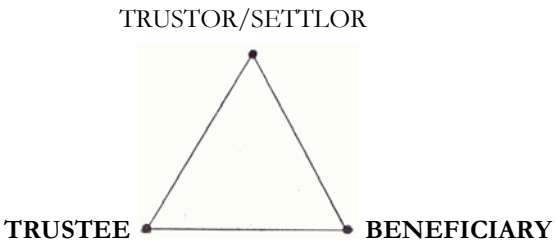

Figure 1: Trusteeship

One major source of misunderstandings is the frequent invocation of trusteeship metaphors without juridical content—a usage already encountered in the literature on common *cultural* heritage, often labelled as "comparable to trusteeship in a *non-legal* sense" (Stocker 1993, 123; Genius-Devime 1996, 354). In the environmental field as well, whenever ethical terms like "resource stewardship" (Tarlock 1997, 66), "international/global stewardship" (Brown 1998; Lucas *et al.* 1998), "man's obligations as Earth's custodian" (Caldwell 1973, 210), "man's stewardship or trustee responsibilities for Earth's natural resources and life systems" (Robinson 1975, 3) or the role of states as "*Hüter* [guardians/keepers] *oder Treuhänder*" for the environment (Calliess 2000, 247) are invoked, the focus tends to be on *bilateral* duties owed by the present generation of humankind—as trustee—to future generations or "future humanity" as the beneficiaries[122] (Busuttil et al. 1990; Kiss 1997, 247; Gillespie 1997, 107; Gaba 1999). Yet these purely metaphoric formulations can hardly be taken as reflecting a common trusteeship model in a legal sense.

By contrast, a trilateral legal structure of international public trusteeship over environmental resources (Sand 2001, 50) is easily expressed in the following diagram:

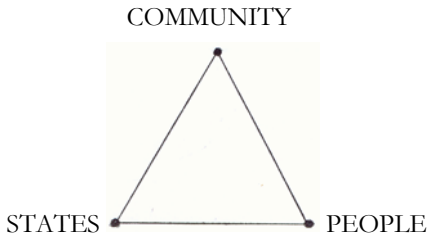

Figure 2: International Environmental Trusteeship

Admittedly, this oversimplified model leaves a num-

[121] "Even society as a whole, a nation, or all contemporary societies taken together, are not owners of the Earth. They are merely its occupants, its users; and as diligent guardians, must hand it down improved to subsequent generations." [NOTE that the reference to *bonus pater familias* (literally, "good family father"; i.e., caretaker, steward or guardian) of Roman law—in which Marx had been trained—defines a standard of care comparable to the due diligence of a common law trustee, as an "ordinary prudent man dealing with the property of another" (Scott 1999, 145).]—A similar thought ("we don't inherit the Earth from our ancestors, we borrow it from our children") has variously been attributed to a letter from Chief Seattle, patriarch of the Duwamish and Squamish Indians of Puget Sound, to U.S. President Franklin Pierce in 1855 (Clark 1985); to French writer Antoine de Saint-Exupéry (in President Mitterand's speech at the 1992 UN Earth Summit, Rio de Janeiro); or to "an old Kenyan proverb" (De Marco 2001).

[122] Though typically omitting any reference to the assumed supreme trustor/settlor creating such an intertemporal trust, whose identity presumably derives from some natural-law premise, and hence would depend on one's "theological inclinations" (Plater et al. 1992, 375).

ber of questions open for debate—starting with the definitions: of the community concerned as *trustor/settlor* (the global community? or the community of members of specific international regimes; e.g., contracting parties to a multilateral convention?); of the sovereign entity concerned as *trustee* (states only? or also intergovernmental institutions acting in areas outside national jurisdiction; e.g., the UN International Seabed Authority?); of the people concerned as *beneficiaries* (present *and* future civil society? individuals *and* groups?); and of the *corpus* of the trust (designated resources only? or the global commons? or the whole environment?).

There are essentially three options for the creation of an international environmental trust:

(a) by a specific trust "deed" (*Widmung*, *affectation*;[123] Kiss 1982, 229) designating a particular resource to be conserved for a beneficial purpose; e.g., the "listing" of protected areas under the *World Heritage Convention*, through a process of formal nomination (by a host state) and conditioned acceptance (by a committee representing the member states), based on agreed criteria (UNESCO 1972; Lyster 1985, 211);

(b) by a treaty designating an entire category of trust resources to be so conserved in all member states; e.g., the plant genetic resources included in Annex I of the new Rome Treaty (FAO and IT 2001), subject to ratification by the *in situ* states concerned; or

(c) arguably, by customary law or "objective" extension of a conventional trust regime to all states (*erga omnes*) regardless of their membership in the treaty, on the basis of objective natural criteria of the resource (*par nature*; Kiss 1982, 225)—which would presumably in turn require some kind of declaratory or customary specification of the international community's "common concern" (Durner 2001, 291); e.g., for the deep seabed (common heritage "as a form of international trusteeship"; Boyle 1997, 84).

Save for the last-mentioned hypothesis of an "objective regime"– which remains controversial (Simma 1994, 358)—the majority of international environmental trusts are likely to arise in one of the consensual forms described under options (a) and (b); hence, their legal effects will normally be limited to relations between parties to the multilateral regimes concerned. When defining the environmental resources of "common concern" envisaged as objects of a global trust—its *corpus*, as it were—the UN Trusteeship Council proposal seems to envisage the global commons in the first place (UNSG 1997, 85; see also the recent recommendations by the German Advisory Council on Global Change, WBGU 2001, 178); however, as the examples of genetic bio-resources and cultural/natural heritage illustrate, "internal" resources situated *within* national jurisdiction could also be so designated if the community as trustor/settlor and the host state as trustee so agree. Hence the trusteeship status of a resource is not at all incompatible with the legitimate exercise of sovereign rights by a host state, just as—and here the analogy from trust law seems perfectly appropriate—a common law trustee has legitimate property rights over the *corpus*, always provided those rights are exercised in accordance with the interests of the beneficiary and with the terms of the trust.[124]

Safeguarding the rights of beneficiaries is indeed a core function of environmental trusteeship. While the balance between a trustee's current use and long-term conservation of the resource is the key *economic* issue (converging in the "sustainable development" paradigm), public participation becomes the key *legal* issue (Raustiala 1997; Ebbesson 1997): In order to "enforce the terms of the trust against the trustee", as it were in common law practice, this may require *procedural* safeguards—including actionable rights to know, rights to be heard, and rights to challenge decisions, along the lines of the Aarhus Convention (UNECE 1998)—as well as *institutional* arrangements such as the empowerment of "guardians" with rights of standing and legal representation on behalf of civil society.[125] In the case of trusts operating in the context of conventional regimes—such as the World Heritage Convention, or the Biodiversity Convention

[123] Significantly, if by coincidence, the French term for "trust funds" in UN terminology is *fonds d'affectation*; see UN Doc. ST/SGB/Financial Rules/1/Rev.3 (1985), §§ 106.3-106.4.

[124] That, incidentally, also applies to the exercise of sovereignty by administering authorities in trust territories under the post-war trusteeship system supervised by the Trusteeship Council (Rouche 1954, 419; Toussaint 1956), and indeed in pre-WWII "mandate" territories—even though Woodrow Wilson's famous reference to the "sacred trust of civilisation" (*League of Nations Covenant* 1919, art. 22) turned out to be untranslatable into French and therefore all but lost its original Anglo-American legal meaning in the practice of the League of Nations. Note, however, Lord McNair's separate opinion (South West Africa case 1950, 150) to the effect that "the doctrine of sovereignty has no application" to the UN trusteeship system. The French text of Covenant art. 22 had mistranslated *sacred trust* as *mission sacrée* (same in the *UN Charter*, art. 73), thereby shifting the legal metaphor from trusteeship to mandate, or agency. The similar German mistranslation from the Covenant used *heilige Aufgabe* (which became *Auftrag* in the UN Charter, hence *Auftragsverwaltung*). The International Court of Justice initially treated the trusteeship concept as a "moral ideal" only (South West Africa case 1966), but later as creating rights and obligations between the trustee and the beneficiaries (Namibia case 1971).

[125] Bruce and Holt 1977; Gassner 1984; Sands 1989, 417; Bruce 1990, 128; Stone 1993, 84; Sands 1997, 83; IWCO 1998, 136.

and the Rome Treaty on Genetic Resources—existing treaty institutions may have to be adapted accordingly. In the case of free-standing "objective" trusts operating outside treaty regimes, the proposed environmental mandate for a reconstituted UN Trusteeship Council might serve a useful residual purpose, also in the hypothesis of jurisdictional disputes between overlapping trusts. The "international community" (Simma and Paulus 1998; Paulus 2001) may even be said to have a responsibility towards the beneficiaries—i.e., transnational civil society—to ensure that they can actually enforce the terms of the trust against trustee-states, through appropriate remedies and institutions; e.g., by the designation of representative civil bodies so as to overcome the "democratic deficit" of global governance.[126]

Conclusions

The broader question whether lessons learned from property rights and "fiduciary" institutions in a national environmental context can be extrapolated to the global environment seems to have intrigued not only international lawyers, but far more serious minds—including Nobel laureates in economics (North 1999). The interdisciplinary project on *Institutional Dimensions of Global Environmental Change* calls this a problem of "scale": viz., the transferability of empirical generalisations and causal inferences from one level to another in the dimensions of space and time (Young 1999, 54; Young 2002).

Public trusteeship for environmental resources is such a problem. What I have tried to show is that a transfer of the public trust concept from the national to the global level is conceivable, feasible, and tolerable. It certainly does *not* pose the "threats to sovereignty" imagined by ultra-conservative US political scientists, who have conjured up images of "the black helicopters of the United Nations" invading Yellowstone National Park to carry out field inspections under the *World Heritage Convention* (Rabkin 1998, 46).[127] Ironically, that treaty—which now has 165 member states—goes back to an initiative by the United States, due mainly to the efforts of the first chairman of the US Council on Environmental Quality, Russell Train (UNESCO 1972; Train 1972; Meyer 1976). The essence of environmental trusteeship, as embodied in the convention, is the democratic *accountability* of states (Jonas 1984, 36; Brown 1994, 142; Redgwell 1999, 68; Allott 2001, 336; Keohane 2002) for their management of trust resources in the interest of the beneficiaries—the world's "peoples" (Rawls 1999, 23).

The public trust concept reinforces, rather than weakens, the legitimacy of environmental governance by nation-states. There is little evidence, I am afraid, of the icon of territorial sovereignty "fading away" into history (Kiss 1992, 13; Gebel 1998, 150). All I can diagnose in this field is a palish new "greening" of sovereignty (Litfin 1998; *accord*: Brenton 1994; Sands 1994; Chayes 1995; Agarwal et al. 1999; Cusimano 2000, 328)—and that is nothing to apologise for.

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[126] CGG 1995, 257; Crawford and Marks 1998; Wirth 2000, 210; Falk 2001, 165; Edwards 2001, 136; see also Falk and Strauss 2000; Khan 2001; Agarwal *et al.* 2001, 389.

[127] The occasion was a 1995 visit to the Park (at the invitation of the US Government) by the UNESCO World Heritage Committee to hold hearings on potential threats to a "listed" protected area from a mining development project in an adjacent area. The incident prompted—unsuccessful—legislative proposals for an "American Land Sovereignty Protection Act" (H.R. 3752, 104th Cong. 2nd Sess. 1996), providing for congressional approval of all public land designations under international agreements (Gebert 1998).—There are subtle parallels in the European Union, where conservative German and British governments tried to stop the European Commission from undertaking field inspections of national protected areas, especially after the Leybucht case (ECJ 1991); there, the Commission (after complaints from NGOs) had challenged dyke construction projects in a German coastal zone previously "listed" under the 1979 EU Bird Conservation Directive (EEC 79/409; Baldock 1992; Krämer 1993, 217).

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Post-Sovereign Environmental Governance: The Collaborative Problem-Solving Model

by Bradley C. Karkkainen[*]

Much recent scholarship in international environmental policy falls into two camps. One group, the "vertical institutionalists," emphasise the role of international rules and norms in constraining state sovereignty (Aceves 1997; Nichols 1998). Another group, the "horizontal diffusionists," argue that policy innovation occurs chiefly at the level of the nation-state and is diffused horizontally through mimesis, benchmarking, and networks of similarly-situated decision-makers (Risse-Kappen 1995; Slaughter 1997; Slaughter 2000). Both approaches, however, share a common underlying orientation: state sovereignty is taken as a bedrock principle. Sovereign states are presumed to be the natural locus of governance, although the range of policy choices available to states may be influenced horizontally by inter-sovereign norms and best practice standards, or constrained vertically by supra-sovereign rules and norms. The common point of departure, and the central preoccupation of each model, is the role of the nation-state (VanDeveer 1997).

The state-centric flavour of this scholarship may reflect deeply-rooted disciplinary traditions and predispositions. After all, much of the analysis is done by international relations scholars, whose discipline is historically defined by a state-centric inter-*national* inquiry: how do sovereign nations behave toward each other, and why? Within that framework, such factors as international rules and norms or transnational networks may emerge as explanatory variables, but at its core the inquiry focuses on the behaviour of states. Similarly, for legal scholars schooled in classical public international law the core question is: how do inter-*national* legal rules emerge, and to what extent do they constrain or influence the behaviour of sovereign states? Thus even Chayes and Chayes, who made important conceptual contributions with their "managerial" theory of international legal regime-formation, examined these developments primarily through the conceptual lens of state compliance, framing their inquiry as: "Why do sovereign states comply with international legal norms?" (Chayes and Chayes 1997).

This essay breaks with that dominant approach. While acknowledging that states remain powerful and pivotally important actors in the international arena and within their own territorial jurisdictions, I submit that the state-centric thrust of contemporary scholarship obscures a critically important set of developments. Increasingly, environmental problems too complex to be resolved through fixed international rules or straightforward exercises of state sovereignty are addressed through hybrid, multi-party, collaborative governance arrangements that pool and recombine the resources and competencies of a variety of state and non-state actors. These actors include the various organs of sovereign states, subnational governments, multilateral institutions, intergovernmental and non-governmental organisations, business interests, and the independent scientific community (VanDeveer, 1997). Although the vertical institutionalist and horizontal diffusionist models explain some important trends in international environmental policy, neither model satisfactorily accounts for these developments.

The emphasis in these problem-solving institutional collaborations is neither on constraining the exercise of sovereignty from above, nor on achieving inter-sovereign horizontal diffusion of successful approaches. Instead, the new governance arrangements represent an ad hoc and informal substitute for sovereign authority, within a limited sphere whose outer boundaries are defined by the nature and scale of the problem to be addressed. They operate through joint commitments by diverse sets of actors to address complex problems through ongoing collaborative problem-solving, practical deliberation, continuous generation of new information, and a self-consciously "experimentalist" approach that emphasises continuous adjustment, refinement, and reconfiguration of institutional arrangements, goals, and policy measures in light of new learning and changing conditions (Dorf and Sabel 1998; Sabel et al. 2000). Authority to address problems traditionally within the province of state sovereignty is reassigned to hybrid institutional constellations. The effective locus of governance thus devolves from the sovereignty of the state to dynamic and continuously evolving polyarchic arrangements. I call this phenomenon "post-sovereign governance."

Non-state actors have long influenced conventional law- and policy-making processes through consulta-

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tion, advice, and "lobbying," of course. In the new governance arrangements, however, the role of non-state actors is a more direct and robust one. Decision-making—governance itself—occurs in and through collaborations among states and non-state actors working side-by-side as co-participants, co-authors, and co-executors of policy, roughly as formal equals although certainly often of unequal capacity and resources.

Nor should these governance arrangements be understood merely as external horizontal or vertical constraints on state sovereignty. Instead, they require a partial disaggregation or "unbundling" and reassignment of powers traditionally thought to be among sovereignty's essential attributes (Slaughter, 1997; Sassen, 1998). Specifically, the state's power to regulate for environmental protection and conservation of natural resources within its territorial jurisdiction is reassigned to a new hybrid institutional form where it is recombined and merged with the powers, resources, and competencies of other actors, creating a wholly new governance structure—the only structure capable of acting at the appropriate eco-geographical scale, and with an adequate scope of authority to meet the demands of integrated ecosystem management. Characteristically, these new arrangements are open, polycentric, and continuously evolving (Regier 1999). Key elements of this model can be seen, inter alia, in governance arrangements for the Great Lakes, the Baltic Sea, and in crucial respects, the global ozone depletion regime.

Nor are such arrangements confined to the international arena. Similar multi-party collaborative governance arrangements are emerging within nation-states to address similarly complex environmental problems occurring wholly within the state's territory, leading to partial disaggregation (or at minimum, redefinition) of state sovereignty even within its own borders. This essay draws on an advanced example from the US experience, the Chesapeake Bay Program that closely resembles in form and function the arrangements emerging at the international level, and that historically has been a leading prototype for innovations occurring elsewhere.

Reconceptualizing the nature of environmental regulation

Growing recognition of the complexity, pervasiveness, and mutual interdependence of environmental problems is reshaping environmental regulation and natural resource management, both within the nation state and internationally. The United States, for example, is rapidly shifting from a conventional regulatory model based on top-down, piecemeal, command-style rules, toward a model based on locally or regionally tailored, broadly integrative, collaborative, and experimental polyarchic governance arrangements. (Dorf and Sabel 1998, Sabel et al. 2000).

The model of environmental regulation that emerged from the 1960s onward may be characterised as rule-based and rule-bound (Tarlock 2000, Karkkainen 2002). It sought to solve environmental problems by imposing and enforcing fixed uniform rules, binding commands of the state to which all subject to its sovereignty must conform. This approach assumes that an expert decision-maker—the regulator, an arm of the state—would identify the key environmental problems, gather expert information, prescribe effective solutions with sufficient specificity to translate into legally binding commands, and enforce those rules, backed by the coercive power of the state. This model approaches complex problems by fragmentation, carving the larger puzzle into smaller pieces that can be isolated and controlled through categorical commands.

Conventional rulemaking tends to focus regulatory effort on those aspects of environmental protection most susceptible to control by piecemeal rules, emphasising pollution outputs over ecological conditions, pollution control over pollution prevention, technology-based rather than environmental quality-based regulation, large sources over small ones, and medium-by-medium and pollutant-by-pollutant rules over integrated approaches (Graham 1999, Farber 2000, Stewart 2001). It also tends toward fixed, highly prescriptive rules rather than flexible standards or adjustable goals and objectives. These characteristics of environmental regulation, captured in the term "command-and-control", are widely recognised and the subject of much critical commentary.

The limitations of this approach are myriad. Despite great strides in controlling pollution from the largest and most visible sources, environmental quality remains suspect (US EPA 1994). Piecemeal regulatory programmes impose redundant costs on administrators and regulated entities alike, while allowing critical problems to fall between the cracks (Rondinelli 2001, Stewart 2001). The rules themselves, crafted under necessarily fragmentary and incomplete information, are often costly, ineffective, rigid, underinclusive, overinclusive, or at cross purposes with other rules (Farber 1994). Most critically, even as progress is made with respect to isolated, narrowly defined problems subject to such regulatory controls, ecosystems continue to be fragmented and degraded (US EPA 1994).

Recently, however, a new regulatory model has begun to emerge, one that aims at integrated management of watersheds, estuaries, enclosed or semi-enclosed seas, old-growth forests, and other critically threatened ecosystems. Ecosystems exhibit unique local characteristics and require context-sensitive management. Scientists and leading policy-makers have also come to appreciate that ecosystems are complex dynamic systems composed of numerous mutually interdependent components and processes. These processes are often poorly understood due to gaps in scientific understanding, non-linear threshold effects, and high degrees of inherent stochasticity (Gunderson 1999). In the words of one leading ecologist, "Ecosystems turn out to be not only more complex than we think—they are more complex than we *can* think." (Noss et al. 1997). Given the complex interdependencies of ecosystem components and processes, they must be managed as systems, employing an integrated, holistic, "place-based," ecosystem-specific approach (Christensen et al. 1996, Holling et al. 1998, Gunderson 1999, US Forest Service Committee of Scientists 1999). Complexity in ecosystem processes also demands that managers eschew reliance on fixed categorical rules. Advocates of an ecosystem-oriented approach instead urge the adoption of flexible policy-making approaches based on principles of continuous experimentation and dynamic adjustment in response to subsequent scientific advances, new information, changing conditions, and the observed effects of past management efforts (Ibid.). Within this framework, every policy decision is understood as necessarily provisional. In short, an experimentalist "rolling rule" approach is emerging, one that seeks continuous monitoring of ecosystem conditions and stressors, generation of new learning, and adjustment of policy in response to new information and environmental change (Dorf and Sabel 1998, Karkkainen et al. 2000). These features of the new model are captured in the phrase "adaptive management," which has gained widespread currency among the scientists and policy-makers most attuned to an ecosystems-oriented paradigm (Lee 1993, Gunderson 1999).

This new regulatory model also has far-reaching institutional implications. Governance structures must be matched to the eco-geographical *scale* of the resource, typically a scale that does not map well onto conventional, territorially-delimited political and jurisdictional boundaries (Noss 1994). In some cases, the nation-state will map across numerous and diverse ecosystems, and must be subdivided into smaller functional units. In other cases, the nation-state will embrace only a fraction of the ecosystem, making transboundary co-operation imperative. Sub-national political units—states and municipalities in the US context—are also typically either too large or too small, or delimited by arbitrary territorial boundaries that fragment ecological complexes. A high degree of intergovernmental co-ordination is typically required to manage ecosystems at the appropriate eco-geographical scale.

Beyond intergovernmentalism, ecosystem management demands a deeper reconfiguration of governance structures to achieve integrated management of the multiple resources and stressors that jointly comprise the ecological whole. Conventional regulatory structures are poorly matched to the *scope* of this management task. Competencies are fragmented among multiple, mission-specific agencies, and (in federal systems like the US) further dispersed over multiple tiers of government—federal, state, and local. (Holling et al. 1998). Other crucial and scarce resources—land, economic decision-making power, expertise—are largely in the hands of non-state actors, including landowners, businesses, the scientific community, and not-for-profit NGOs. In principle, the state as sovereign could command or entice these non-state actors to conform to a state-devised and state-directed plan to protect the ecological resource. Yet the complex and dynamic nature of ecosystems, coupled with the need to maintain a flexible, dynamic, continuous-learning approach, place it beyond the capacity of any state agency, or the state as a whole, to develop such a plan *ex ante*.

In response to this crisis of state competence, the state must enlist the aid of non-state actors and draw on their expertise and their commitment to use the powers, resources, and competencies at their disposal to join in an open-ended effort at joint problem-solving. These arrangements place state actors side-by-side with non-state actors in a joint enterprise of defining and assessing the ecological problem, proposing and evaluating provisional solutions, determining and executing management plans, monitoring outcomes, and assessing and revising joint plans as necessary over the ongoing life of the project. Thus we see the pooling of expertise, resources, and capacities in joint problem-solving governance arrangements (Karkkainen et al. 2000). Nor, given the need for continuous learning, experimentation and "adaptive management," can that joint effort simply be a once-off advisory exercise, in which the state consults non-state parties and then devises a rule that becomes final and binding through a conventional exercise of sovereignty. What emerges, then, is a dynamic, experimentalist, collaborative exercise, amounting to co-governance of the ecosystem by the state and various non-state partners whose participa-

tion is critical to project's ultimate success (Karkkainen et al. 2000). In the process, conventional distinctions between state and non-state, sovereign and subject, command and compliance, become blurred.

Leading cases

THE CHESAPEAKE BAY

North America's largest estuary, the Chesapeake Bay is prized for its scenic beauty, recreational opportunities, and once-prolific shellfish production, but like many ecological systems, it suffered severe declines in the 20th Century. In response, federal, state, and local governments together with local businesses, residents, and NGOs have pooled their efforts in an ambitious regional collaborative effort known as the Chesapeake Bay Program, arguably the most extensive, mature, institutionally complex, and successful of the new ecosystem governance arrangements (Costanza and Greer 1997).

The Chesapeake Bay Program (CBP) grew up alongside the standard model of environmental regulation. Although the Clean Water Act stringently regulated large point-source polluters, it did not effectively reach pollution from diffuse, non-point sources such as farms and city streets; nor did it mandate integrated ecosystem management. Overall water quality therefore remained poor, and the adverse ecological effects were compounded by destruction or degradation of coastal wetlands, riparian forest buffers, and submerged benthic habitats that play critical roles in protecting water quality and regulating the ecosystem. Overharvesting depleted crucial resources like filter-feeding oysters that play a crucial role in maintaining water quality. Because all these problems interact in complex ways, the ecology of the Bay was not well understood, but it became clear that fixed rules imposed from the outside would not be adequate to address this complex of interrelated problems (Ibid.). The CBP's signal accomplishment has been its capacity to devise a novel and continuously evolving set of institutional arrangements that allow it to address these problems amid radically changing understandings of the nature of the threat and appropriate responses (Sabel et al. 2000).

The CBP began with a broad citizen movement. Spurred by these efforts, congressional leaders funded a major research programme in the 1970s to determine the ecosystem's status and the causes of its decline. Although that study fell short of definitive solutions, it revealed a complex web of interrelated causes and alarming symptoms that spanned several states in the region (Costanza and Greer 1995). In response, a multi-state, interagency Chesapeake Bay Agreement was signed in 1983, committing the US EPA, the states of Maryland, Virginia, and Pennsylvania, and the semi-autonomous District of Columbia "to improve and protect water quality and living resources of the Chesapeake Bay estuarine systems." That Agreement established a durable core institutional framework, articulated a shared long-term vision and goals, and set in motion an iterative process of investigation, evaluation, and further substantive commitments, operating as the functional equivalent of the now-familiar Framework Convention in the international environmental law-making arena.

A second Chesapeake Bay Agreement in 1987 marked the next evolutionary phase. It established monitoring of biological indicators of ecosystem health as the bedrock of future management efforts, identifying the "productivity, diversity, and abundance" of the Bay's living resources as "the best ultimate measures of the Chesapeake Bay's condition." The 1987 Agreement set ambitious performance improvement targets, including reduction of nutrient loadings by 40%. When further studies revealed that loadings in various tributaries had differential impacts on water quality, parties revised their system-wide goals and codified them in a 1992 commitment to develop tributary-specific nutrient reduction targets, strategies, and implementation tools. The increasing intricacy and location-specific nature of these tasks then led the programme to devolve crucial management responsibilities to semi-autonomous, public-private "tributary teams" composed of government officials, scientific experts, agricultural and industry representatives, and citizen volunteers who become experts on the problems and solutions in their own tributaries, but whose tributary-specific efforts remain "nested" within the larger basin-wide framework.

Subsequent Executive Council directives have added progressively more detailed commitments in such areas as basin-wide toxic reduction, habitat restoration, riparian forest buffers, wetlands protection, agricultural non-point source reduction, and removal of stream blockages to improve fish passage. The most recent agreement, known simply as Chesapeake 2000, is the most detailed and comprehensive recovery plan to date. It sets ambitious targets for the restoration of oyster beds, wetlands, riparian buffers, and submerged aquatic vegetation; calls for the development of multi-species management plans for the protection of sensitive species; and commits the states to implement stream-specific watershed management plans and restoration goals. It also calls for a 30% reduction in the rate of urban sprawl, and per-

manent preservation of 20% of the lands in the watershed from future development.

Complex institutional arrangements have also evolved. At the centre of these arrangements is an Executive Council, consisting of signatories to the framework Agreement, which sets overall goals and objectives. At the next tier is a permanent implementation committee comprising representatives of federal, state and regional agencies that develops and carries out more fully elaborated restoration plans. These bodies carry out their mandates in consultation with a Scientific and Technical Advisory Committee, a Citizens Advisory Committee, and a Local Government Advisory Committee. Much of the Implementation Committee's work is delegated to specialist subcommittees on monitoring, research, and habitat restoration, as well as the tributary-specific teams. Coordinating all these efforts is a US EPA liaison office. Together, these arrangements ensure that a variety of governmental and non-governmental voices have opportunities to shape overall programme direction.

Participants in the Chesapeake Bay Program have come to see that the more they learn about the Bay's complex ecology, the more surprising new findings will be. The programme not only has come to expect surprises, but also has learned to seek them out. Governance arrangements reflect this understanding. Much of the overall Program effort goes into ecosystem-situated scientific investigation, monitoring of critical stressors and biological indicators, computerised modelling of the Bay's complex mosaic of ecosystem processes, and GIS mapping to facilitate synthesis, analysis, and presentation of data on basin-wide or location-specific scales. The one constant is that the policy measures and the scientific models upon which they are based are always provisional, and subject to iterative refinement or large-scale modification as needed. Even the most broadly-stated goals and objectives may be redefined or modified as the programme evolves, in a characteristically pragmatic mutual adjustment of means and ends (Sabel et al. 2000).

In practice, the Chesapeake Bay Program has employed a grab bag of regulatory techniques, legal instruments, and voluntary measures to build policy packages from disparate measures effectuated through any of its component institutions. These may consist in legislative acts or administrative rules at the federal, state, or municipal levels, binding throughout the region or in some of its parts. Sometimes they involve largely procedural framework agreements within which subsequent objectives and implementation measures may be progressively specified. At other points, they take the form of non-binding voluntary guidelines, technical or financial assistance packages, or simple pleas for voluntary co-operation, perhaps coupled with social pressure on non-cooperators (Costanza and Greer 1995). The Executive Council often advances proposed measures through joint executive decrees called "Directives." Though they have dubious legal pedigree and status, these are regarded as morally binding commitments to use all available powers and authorities to carry out the stated aims. Throughout, the boundary between "law" and "not-law" grows indistinct; what matters is what works, and that varies with the circumstance (Sabel et al. 2000).

The understanding of citizen involvement has also evolved. As programme activity established the importance of local contextual knowledge and the need for both local and central institutional experimentation, citizen participation broadened and deepened. Through the 1960s and early 70s, participation meant conventional public education through publications, public meetings, hearings, and mass media to increase public awareness, build political support for clean-up and restoration measures, and inspire voluntary efforts. When it became clear in the 1980s that management of the ecosystem would require levels of monitoring that exceeded the capacities of government alone, the Program looked to citizen volunteers, who were taught scientific monitoring and reporting protocols and became quasi-experts capable of producing reasonably reliable environmental data (Costanza and Greer 1995). The recent emergence of a tributary strategy emphasising the need for stream-specific goals and measures marks a third reconceptualisation of citizens' roles, this time as active co-authors and co-implementers of tributary-specific policy (Sabel et al. 2000).

What is the relevance of this case drawn from US experience to the broader thesis of this essay? First, the trend toward partial disaggregation, recombination, and redefinition of core attributes of state sovereignty is not confined to the international arena. Instead, a distinctive problem-solving, polyarchic governance model is emerging in response to complex ecological problems that overwhelm the capacities of the sovereign state, conventionally understood, whether those problems occur within the state's territorial boundaries, or partially beyond them.

Second, developments in the Chesapeake Bay region should be understood as having precedential value in the international arena in light of the theory of dual sovereignty that informs the peculiar brand of feder-

alism found in the US Under international law, the US government is presumed sovereign over persons and natural resources within its territory. As a matter of US constitutional law, however, the (subnational) state governments are also considered sovereign or quasi-sovereign entities, and the federal government has limited, enumerated powers. In both theory and practice, some matters fall within the exclusive competence of the states, not merely at the sufferance of the federal government but as a matter of fundamental legal right. Other responsibilities are broadly shared, with the federal role paramount in the event of conflict. In still other areas, such as foreign affairs and the regulation of interstate commerce, the federal role is exclusive. Given this "dual sovereign" role of the states, the law of US inter-state relations has often been seen as relevant precedent for international legal developments, just as international law has often served as the source of principles to adjudicate disputes among US states. The argument advanced here, then, is that the new hybrid governance arrangements in the Chesapeake Bay reflect a model of inter-sovereign collaboration readily adaptable to the international arena. In this model, multiple sovereigns willingly surrender and recombine crucial elements of their sovereign powers, forging a new problem-solving hybrid arrangement that also embraces other, non-state actors—an arrangement better suited to the complexities of ecosystem management than traditional exercises of sovereign prerogative.

THE US-CANADIAN GREAT LAKES PROGRAMME

Spanning a large portion of the US-Canadian border in the heavily industrialised heartlands of both nations, the Great Lakes comprise about 20% of the fresh surface water on the planet. Like the Chesapeake Bay Program, the joint US-Canadian approach to Great Lakes management emerged out of recognition that, despite significant progress under conventional rule-based regulation toward reducing gross pollutant inputs from industrial point sources and municipal wastewater, the ecosystems of the lakes remained badly degraded by a complex of interrelated problems, including excess nutrients, airborne toxic pollutants, contaminated sediments in rivers and harbours, declining fisheries, wetlands loss, and alteration of natural stream flows from 6,000 tributaries across the vast basin, requiring a reorientation toward integrated management (Christie 1995, Francis and Regier 1995, Regier 1999). Although neither as institutionally mature nor as fully articulated as the Chesapeake Bay Program, the governance arrangements in the Great Lakes are nonetheless the premier example of successful transboundary collaboration in joint management of a freshwater aquatic ecosystem.

As early as 1972, the US and Canada negotiated a Great Lakes Water Quality Agreement. Recognising that conventional pollution control would not be sufficient to restore ecosystem health, subsequent 1978 and 1987 iterations of the Great Lakes Water Quality Agreement explicitly embraced a goal of integrated ecosystem management throughout the basin (Francis and Regier 1995). Significant progress has been made through a deeply collaborative transnational effort extending well beyond sovereign-to-sovereign relations to involve subnational governments and the organs of civil society in both nations. Co-collaborators include various federal agencies, eight US states and two Canadian provinces, major ports and municipalities throughout the region, Native American tribes (US) and First Nations (Canada), local and regional NGOs, leading businesses and trade associations, and the independent scientific community (Ibid., Regier 1999).

Also playing leading roles are a series of binational non-governmental and intergovernmental bodies:

- Great Lakes United, an influential transnational federation of NGOs;
- the International Association of Great Lakes Research, a transnational scientific society;
- the Council of Great Lakes Governors, a co-ordinating body for the chief executive officers of the US states;
- the Great Lakes Commission, a co-ordinating body for US states and Canadian provinces;
- the Great Lakes-St. Lawrence Mayors' Conference, a transnational co-ordinating body for municipal officials;
- the binational Great Lakes Fishery Commission, charged with co-ordinating management of fishery resources; and
- the International Joint Commission, a six-member binational commission established under the 1909 Boundary Waters Treaty to regulate lake levels and water diversions and to adjudicate international disputes over Great Lakes resources (Ibid., Christie 1995, McKenzie 1997, Regier 1999).

Although the latter has no direct management authority over environmental quality issues, it is an influential voice in the ongoing policy discussion, providing overall co-ordination, organising high-visibility fora for public participation, producing independent critical evaluations of management programmes and progress toward agreed goals and objectives, and

sponsoring subsidiary scientific, technical, and advisory bodies that are often influential participants in governance processes (Regier 1999).

Like the Chesapeake Bay Program, the Great Lakes initiative incorporates a "nested" structure, devising strategies and co-ordinate management efforts at multiple scales, from local harbours and tributary watersheds to the basin as a whole (Regier 1999, US EPA 2000). Overarching basin-wide strategies include the Binational Toxics Strategy, a voluntary effort developed through a broadly collaborative and participatory process that included industry groups as well as NGOs and governmental entities, and a Biennial State of the Lakes Ecosystem Conference where collaborative partners participate in periodic joint reassessment of progress, goals, plans, and implementation measures. At an intermediate scale are Lakewide Area Management Plans or "LAMPS" for each of the five lakes, developed through binational collaborations among federal, state, and local agencies and non-state parties. At the most local level, Remedial Action Plans or "RAPs" have been developed for each of 43 designated high-priority "Areas of Concern," typically contaminated ports and estuaries contributing high levels of pollution loadings. RAPs are highly variable in their structures, processes, and policy approaches but in most cases involve high levels of local public participation and multi-party collaboration (McKenzie 1997, Regier 1999). Overseeing implementation is a Binational Executive Committee comprising US, Canadian, state, provincial, and tribal officials (US EPA 2000). A US EPA co-ordinating office, the Great Lakes National Program Office, was created in 1987, emulating the Chesapeake Bay model (Ibid.). Tying together this sprawling polyarchic governance structure is a common core of information, data, and communications links provided by the Great Lakes Information Network, itself a binational public-private collaboration that pools the databases and information resources of dozens of governmental agencies and non-governmental entities throughout the region (Francis and Lerner 1997).

The Great Lakes management effort thus rests on deep, ongoing, transboundary collaboration among state and non-state parties committed to the co-management of a shared resource of critical importance to both nations. The institutional arrangements that jointly comprise the management regime extend well beyond the organs of the respective sovereign states to include subnational and non-state actors, interacting through informal and sometimes even nominally extra-constitutional channels to effect governance in the void left by state incapacity (Regier 1999). As in the Chesapeake Bay, these efforts have a rolling, experimentalist flavour, as the parties continuously reassess and revise goals, objectives, and management measures in light of lessons learned, newly emerging science, and changing social, political, economic, and environmental conditions.

THE BALTIC SEA

The institutions that have emerged for co-management of the Baltic Sea are increasingly recognised as a model for other regional marine management efforts, including those sponsored by UNEP's Regional Seas programme (UNEP 1997). The Baltic regime shares many features of the Chesapeake and Great Lakes efforts. Indeed, the three programmes are aware of their common orientation, and seek to learn from each other through a series of consultations and scientific and technical exchanges (Ibid.). This constitutes a kind of horizontal networking and benchmarking of best environmental management practices, albeit not at the state-to-state level but rather at the level of one regional "post-sovereign" collaborative governance arrangement to another.

Nearly twice the size of the Great Lakes, the Baltic Sea is the world's largest body of brackish water, functioning like a large estuary with freshwater inflows from its numerous tributaries mixing with a highly variable saline water inflow through the narrow straits separating it from the North Sea (Jansson and Velner 1995). Its watershed encompasses some of the most intensive industrial, agricultural, and silvicultural production in northern and eastern Europe, resulting in severe toxic and conventional pollution, siltation, and eutrophication (Ibid.; Serafin and Zaleski 1997). Complicating management efforts, the Baltic coast spans nine states with widely divergent environmental standards, economic conditions, political systems, and approaches to environmental protection.

The more environmentally minded of the Baltic coastal states recognised early on that protection of their marine waters would require international co-operation within the region (Haas 1993). Indeed, some commentators have argued that concern for the Baltic was a prime factor motivating Sweden's offer to host the historic 1972 United Nations Stockholm Conference on the Environment, which ushered in the era of modern international environmental law (Knecht 1996, Jansson and Velner 1995). In 1974, seven Baltic states signed a framework Convention on the Protection of the Marine Environment in the Baltic Sea Area, which entered into force in 1980. The Convention—the first multi-state regional agreement to control and reduce pollution from land-

based and airborne sources as well as ships—created a permanent institutional apparatus revolving around the Baltic Marine Environmental Commission, popularly known as the Helsinki Commission or "HELCOM". HELCOM was granted broad authority to collect, assess, and disseminate information on environmental conditions and implementation of the initial commitments made by parties to the convention to monitor conditions, exchange data, and report on discharges, dumping, or spills occurring under their jurisdiction (Greene 1998).

HELCOM and its subsidiary working groups proceeded to produce a remarkable stream of detailed, quasi-legislative decisions and non-binding recommendations to member states on various aspects of marine environmental protection, from ship-based pollution to controls on toxic pollutants to "best management practices" for agriculture and other land-based sources of marine pollution (Ibid.). Although not legally binding, these statements are adopted by unanimous consent of the parties, and like the Chesapeake Bay Program's "directives" are regarded as morally binding and on the whole influential in shaping parties' behaviour (Roginko 1998). They are also easier to adopt, amend, and revise in light of new learning than are formal treaty commitments (Ibid., Chayes and Chayes 1995).

In other respects as well, the dynamic thrust of Baltic regime lies well beyond formal treaty commitments. In 1988, Sweden convened a meeting of the environmental ministers of the Baltic states, who agreed to a (then) non-binding goal of 50% reductions in discharges of nutrients, heavy metals, and organic toxins by 1995—a goal later formally incorporated into the revised 1992 treaty. Also in 1988, HELCOM granted observer status to NGOs, giving them access to HELCOM documents and allowing them to participate in working group meetings on a non-voting basis, thus simultaneously bringing new voices and perspectives into the regional policy-making process, lending transparency to its accomplishments and failures, and conveying substantive information to the public, contributing to the growth of region-wide popular constituencies for environmental improvements (Roginko 1998). National, regional, and global environmental NGOs, regional associations of ports and municipalities, industry groups, and independent scientific societies like the Baltic Marine Biologists, the Conference of Baltic Oceanographers, and the Conference of Baltic Hydrologists are among the active non-state participants in Baltic governance, with NGO representatives frequently serving on governmental boards and in region-wide management institutions (Jansson and Velner 1995). IGOs and NGOs have also taken on significant implementation responsibilities, for example by providing financial and technical assistance to projects undertaken by the programme and monitoring implementation of funded remediation projects.

In 1990, the heads of government of the Baltic states, joined by Norway, Czechoslovakia, and the EC, issued the Baltic Sea Declaration on Environment, calling for a reorientation toward ecological restoration of the Baltic marine environment, coupled with an emphasis on reducing pollution at the source. The Ministers also created a Baltic Task Force consisting of HELCOM members, Czechoslovakia, Norway, the EC, the European Bank for Reconstruction and Development (EBRD), European Investment Bank, Nordic Investment Bank, and the World Bank. The function of the Task Force is to identify cost-effective investment projects that will reduce pollution, focusing especially on pollution "hot spots" in the financially strapped states of the former Soviet bloc (Roginko 1998, Jansson and Velner 1995). This innovation came about when the Nordic countries, which had already substantially reduced pollution, recognised that funds could be invested more cost-effectively in Eastern Europe and the former Soviet Union (Roginko 1998). Adapting an approach pioneered in the Great Lakes, some 132 "hot spots" were identified, including 95 in Eastern Europe and the former Soviet Union. Remediation of these hot spots, with technical assistance from programme partners and financial assistance from consortia of development banks, is now a centrepiece of the Baltic pollution reduction strategy (Serafin and Zaleski 1997, Greene 1998). Simultaneously, the Baltic process launched a programme to designate "green spots," an interlinked network of protected areas. At intermediate regional scales, effective transboundary collaborations have been established between Finland and Russia with respect to the Gulf of Finland, and between Sweden and Finland with respect to the Gulf of Bothnia (Jansson and Velner 1995), thus reflecting a multiple-tiered "nested" structure similar to those found in the Chesapeake and Great Lakes regions.

In 1992, all nine Baltic states and the European Community codified these commitments in a new Helsinki convention calling for the restoration of the Baltic Sea ecosystem through concerted action throughout the watershed, extending to territorial seas, internal waters, and inshore land-based sources, consistent with a Joint Comprehensive Environmental Action Program (JCP) to be periodically revised and updated. The new convention, which entered into force in 2000, further specifies that the JCP is to be prepared in collaboration with the four de-

velopment banks already participating in the task force. The new convention also creates a more robust institutional centre, a permanent Program Implementation Task Force (PITF) charged with responsibility to "administer, implement, monitor, and periodically update the programme."

Like the Chesapeake Bay and Great Lakes programmes, the Baltic regime has long emphasised joint monitoring of environmental conditions and stressors as an essential foundation for policy development and periodic reassessment and adaptive adjustment. Reporting requirements, monitoring protocols, and assessment capacity have been periodically revised and strengthened, building regional capacity to generate and adjust to new information on ecological conditions (Greene 1998). Monitoring of physical, chemical and biological variables of the open sea started in 1979, but until 1992 monitoring of coastal waters was considered a national responsibility, and only summary assessments were required to be reported. Under the revised 1992 Convention, states are obligated to monitor coastal waters and report the data directly to the Commission. The 1992 Convention also calls for monitoring in designated Baltic Sea Protected Areas (BSPA). These disparate monitoring programmes are now integrated in a common structure, designated Co-operative Monitoring in the Baltic Marine Environment (COMBINE), which coordinates monitoring region-wide under uniform monitoring protocols and data standards. Additional initiatives have been undertaken to improve transparency, communications, and joint access to information through web-based information systems like BALLERINA, which pools the data and information resources of a variety of state and non-state actors throughout the region, explicitly emulating the model of the Great Lakes Information Network (UNEP 1997).

By most accounts, the Baltic regime has been reasonably effective in addressing land-based pollution, and significant progress is indicated in other areas (Haas 1993, UNEP 1997). Although environmental quality in the mainstem of the Baltic has not improved dramatically, the decades-long trajectory of worsening degradation has been halted and arguably reversed. Indeed, HELCOM has been criticised in some quarters for its heavy emphasis on environmental protection at the expense of competing economic needs and uses of the Baltic Sea (OECD 1990).

The Baltic regime exhibits the collaborative, experimentalist, and polyarchic flavour that I have characterised here as post-sovereign governance. It operates across regional transboundary scales, extending its reach even to land-based activities deep within the interior reaches of participating states if they affect the marine environment. It adopts an ecosystem-oriented, holistic, integrated approach to environmental management, and as a necessary corollary it is self-consciously experimentalist and adaptive, operating through the progressive and iterative articulation, reassessment, and readjustment of goals and policy responses as scientific understanding deepens and monitoring data produce new information (Jansson and Velner 1995). Like the Chesapeake Bay and Great Lakes programmes, it increasingly involves deep transnational collaboration not only among sovereign states and their subsidiary organs but also among subnational governments, industry groups, environmental and other NGOs, scientific societies, IGOs, and other non-state parties throughout the Baltic basin in a joint exercise in eco-regional environmental self-governance (Ibid.).

Toward global post-sovereign arrangements?

These cases place several large eco-regions, jointly encompassing a non-trivial share of the planet's vital environmental resources, under collaborative and experimentalist governance arrangements of the type this essay terms "post-sovereign" governance. Each of the cases cited here has been widely hailed in policy circles as an innovative and successful model, to be studied and emulated by those seeking to manage other marine (Baltic), estuarine (Chesapeake Bay), or freshwater aquatic (Great Lakes) resources, suggesting that the influence of this model might eventually extend well beyond these regions. Thus far, however, all the cases have a distinctly regional character. Does this model have any relevance for global decision-making and global environmental governance?

Given the apparent successes of each of the regimes examined here, global policy-makers might consider whether some seemingly global environmental problems might lend themselves to regional solutions, on the theory that effective inter-sovereign and state/non-state problem-solving collaborations of the kinds described here might be more readily obtained at regional scales. Arguably, for example, the conservation of biodiversity might best be understood not as a single overarching global problem requiring uniform global rules, norms, and approaches, but rather as a series of thematically linked regional ecosystem-scale problems, requiring regional solutions and regional governance models. Thus, we might fruitfully divide the problem of biodiversity conservation into thematic categories like protection of tropi-

cal rainforests, temperate rainforests, boreal forests, mangrove forests, large estuaries, large marine ecosystems, and so forth, and then look to experiment with, evaluate, and replicate collaborative regional governance models within each of those categories. Indeed, the Biodiversity Convention and its subsidiary bodies and affiliated NGOs and IGOs are beginning to take some conceptual steps in that direction, although on-the-ground implementation lags. This, in turn, suggests a revised role for global agreements and global institutions: to spawn and support regional governance processes that place the effective locus of governance at the appropriate eco-regional scale while nesting such regional efforts within some larger set of global institutions that can monitor the various regional governance mechanisms, provide technical assistance where appropriate, identify and diffuse best practices, and so forth.

Similarly, many problems of the marine environment, and virtually all problems involving freshwater aquatic systems, can be seen as regional in character. Rather than awaiting the emergence of global rules or norms concerning land-based marine pollution, for example, we might start to address these problems at eco-regional levels and seek to bootstrap success in some path-breaking regions (e.g., the Baltic or the Chesapeake Bay) into a co-ordinated global network of regional efforts, revolving around a central capacity to monitor regional projects and to benchmark, evaluate, and diffuse best practices. UNEP's regional seas programme, while presently a modest effort, might provide a useful institutional infrastructure for such a co-ordinated initiative. Regional approaches also increasingly inform fisheries management under the new Straddling Stocks Convention, and opportunities might emerge for horizontal benchmarking and diffusion of successful strategies and approaches there as well. In general, however, such regional efforts thus far have taken a backseat on the international environmental policy agenda to high-profile global issues and approaches, where progress generally has been more difficult to achieve.

On the other hand, some environmental problems are truly global in nature, although there may be fewer of these than is widely supposed. Ozone depletion and climate change are two leading examples. In such cases, regional collaboration appears a poorer fit. Yet to the extent the international community has had success in addressing such inescapably global problems, I submit that it has come about in part through the emergence of institutions that share some crucial features with those described in this essay.

Consider, for example, the ozone depletion regime, widely regarded as the paradigmatic case of effective global action in protecting the environment. The standard account credits the success of the ozone depletion regime to the issuance of globally binding rules and strict numerical standards, "targets and timetables" that extend to outright bans on production and consumption of certain substances. On this account, conventional top-down regulatory prescription is the formula for success in international environmental policy. Yet the present rules concerning ozone depletion did not arrive on the scene fully formed, but instead emerged over time as the product of a series of shifting institutional arrangements and experimental and self-consciously provisional policy measures that were revised iteratively in response to evolving scientific understandings and changing conditions as revealed by careful monitoring. Nor does the complex institutional environment out of which these rules emerged neatly fit the standard state-centric model of international governance. NGOs and the independent scientific community, along with crucial private sector actors (e.g., leading CFC manufacturers), played indispensable roles in the policy debates that led to negotiation of the Vienna Framework Convention, the landmark Montreal Protocol, and the subsequent London and Copenhagen amendments and adjustments. What emerged, then, was a series of evolving collaborative institutional configurations embracing state as well as non-state actors. The collaborative partners jointly reached provisional policy formulations that provided, above all, for the ongoing monitoring and scientific inquiry that ultimately led to progressive and iterative revision of the rules in light of new learning and changing conditions. That dynamic process continues to the present. As in the Chesapeake Bay, Great Lakes, and Baltic Sea programmes, sovereign states are neither the sole authors nor merely the implementers of the rules; they are co-authors, with others, in an ongoing multi-party governance process that at least partially reflects the characteristics of "post-sovereign" governance described here.

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International Arbitration, Sovereignty and Environmental Protection: The Turkish Case

by Aykut Çoban[*]

There have long been debates about the challenges of 'globalisation' to state sovereignty. Two dominating perspectives can be identified. The first emphasises that sovereignty is in terminal decline by virtue of the dissolving effects of globalisation on national economic policies and the increasing influence of international organisations and NGOs on governmental decisions (Bauman, 1998: 64-8; Booth, 1991: 542; Taylor, 1999). The second argues in favour of continuity by suggesting that as the international norms concerning sovereignty have guided the development of the state in the sense that each state recognises the others as having sovereignty within their own borders, and as even the biggest multinational company cannot be a rival of states in terms of control of the means of violence, 'the history of the past two centuries is thus not one of the progressive loss of sovereignty on the part of the nation-state' (Giddens, 1990: 67; see also James, 1999). Environment–sovereignty relations are also discussed from within the decline–continuity duality (Conca, 1994: 701-2; Litfin, 1998). Global environmental degradation is not merely regarded as testimony to the inefficacy of the sovereign state but as a challenge to the concept of sovereignty. On the other hand, the emergence of international institutions for environmental protection is seen as expanding states' capacity to deal with the problem, thereby consolidating sovereignty.

The views about international arbitration can be articulated into the decline–continuity debate as the formation of new legal practices that mainly employ the international arbitration method, poses a problem of national sovereignty and territory. The intensifying internationalisation of capital has been accompanied by the creation of new legal regimes through GATT/WTO, NAFTA, the proposed MAI and arbitration proceedings since world-wide operations of capital in trade, finance, services and investments required the introduction of innovations in national legal systems. These new regimes negotiate between national sovereignty and international economic practices by creating viable systems of co-ordination and order among corporate economic actors and between those actors and the state (Sassen, 1996: 26; 1999: 167). Seen in this light, one might claim that the recognition and enforcement of foreign arbitral awards is meant to be intervention in sovereignty rights of the state within its territory, hence the end of sovereignty. However, one can contrast this view with the claim that sovereignty continues to matter as it is the state itself that consents to arbitration processes.

These two perspectives are valuable in their own right since sovereignty has undergone changes as well as keeping its significance (Sorensen, 1999). But what is problematic is that, as Ken Conca (1994: 707) puts it, 'sovereignty in both perspectives is essentially conceived as freedom from external constraints on state action and choice. This one dimensional view overlooks the fact that sovereignty looks inward as well as outward. It finds its basis not only in autonomy relative to external actors, but also in the state's jurisdictional power over civil society'. That is to say that neither helps us to grasp the multi-faceted dimensions of sovereignty. Recognising the multidimensional character of the concept, this article seeks to analyse the effects of the international arbitration method on sovereignty and environmental protection in the Turkish case. The article discusses these effects in terms of both the outward aspects (non-intervention, territorial integrity and independence) and inward aspects of sovereignty (judicial jurisdiction, rule making and state–society relations).

To do so, it raises three related points: i) the combination of international and national dynamics, ii) the dual role of the international domain in rule making, and iii) the jurisdictional shift from the realm of public law to the realm of the international private arbitration method. It concludes that sovereignty in the Turkish case has been becoming a device to serve the demands of international/domestic capital, and in turn that this has implications for both the environment and the legitimacy of the state. Before embarking on a discussion about the effects of international arbitration on environmental protection and sovereignty, a brief account of the development of international arbitration in Turkey should be given.

I

World-wide, international commercial arbitration has,

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over the past 20 years, become a widely accepted method for settling international commercial disputes. Through arbitration, parties avoid being forced to submit to the regime of national courts. There are usually three arbitrators selected by the parties. The arbitrators are private individuals and act as private judges, holding hearings and issuing binding judgements in a secret process with no public access. Arbitration is, by and large, privatisation of the justice system (Dezalay and Garth, 1995: 31; also see Karrer, 1999; Wagoner, 1999). International procedures of commercial arbitration have become harmonised through international conventions and regulations. Among them are the 1958 UN Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the New York Convention) and the 1961 European Convention on International Commercial Arbitration (the Geneva Convention). Turkey approved both conventions in 1991 (*Official Gazette*, no. 21002, 25/9/1991; no.21000, 23/9/1991). The UN Commission on International Trade Law (UNCIDRAL) established in 1966 has also important functions for unifying the law of international trade. The UNCIDRAL arbitration rules of 1976 have been adopted by most of the arbitral organisations throughout the world, except the International Chamber of Commerce. The UNCIDRAL Model Law of 1985 has been also adopted, without change or with minor refinements, or followed as a model by a significant number of UN member states when establishing or modifying their commercial arbitration statutes (Wagoner, 1999:18-9).

With regard to investments, international arbitral tribunals to settle disputes between foreign investors and states are not as widely used and internationally institutionalised compared with their use in international commercial disputes. An important convention in this field is the 1958 Convention on the Settlement of Investment Disputes Between States and Nationals of Other States (the Washington Convention). On the basis of this convention, many bilateral agreements between states have been made, and within which international arbitration for settlement of international investment disputes have been accepted (www.worldbank.org/icsid/treaties/treaties.htm).
However, it would not be inaccurate to note that the Convention and bilateral agreements do not provide harmonised and unified rules of international arbitration for investment disputes, especially considering the intensifying internationalisation of capital flows during the last three decades. It seems that the proposed Multilateral Agreement on Investment (MAI) was partly designed to provide signatory states with comprehensive international regulation on the settlement of investment disputes.

The MAI negotiations initiated in 1995 were intended to provide a broad multilateral framework for international investment with high standards for the liberalisation of investment regimes, the protection of investment, and effective dispute-settlement procedures. When adopted, the MAI allows foreign investors to sue national and local governments before a binding international arbitration panel, challenge national legislation, and seek compensation from the state for the investor's loss of income and reputation (UNCTAD, 1998: 64-74; Hoedeman, 1998: 156-8). In a similar vein, for instance, the US Ethyl Corporation filed a claim for compensation under NAFTA, which is a model for the MAI, against the government of Canada which had banned the use of its toxic gasoline additive, and the Canadian government had to make a settlement agreement with the corporation to pay for the loss of profits (www.ethyl.com/news/4-17-97.htm; Monbiot, 2000: 310-11). However, unlike NAFTA, the MAI has not yet been allowed to come into effect because of disagreements among states especially on protectionist attitudes towards some sectors, and because of strong resistance and demonstrations organised since early 1998, particularly during the WTO meeting of 1999 in Seattle, by trade unions, NGOs, environmental groups and organisations opposing the MAI in favour of labour rights, consumer and environmental standards (Clair, 1999; Menotti, 1999; Retallack, 2000; Roberts, 1998; Shrybman, 1999; Tabb, 1999).

Turkey has taken part in the MAI negotiations, and declared itself, with some reservations, to be ready to adopt it so as to attract more foreign investment (Hazine Müsteşarlığı, 1998). And it has even been among the leading countries nationally adopting some provisions of the proposed MAI on international arbitration. It was in mid-1999 that Turkish governmental bodies (including the President) and representatives of business began highlighting the necessity for the inclusion of the principle of international arbitration for investments into national legislation for further liberalisation, deregulation and restructuring of the economy, and thereby for foreign investment inflows (*Cumhuriyet daily*, 28/5/1999; 2/6/1999; 7/7/1999; *Milliyet daily*, 4/6/1999; *Hürriyet daily,* 7/6/1999). The domestic bourgeoisie and its prominent organisation TÜSİAD (the Turkish Industrialists' and Businessmen's Association) were supporting international arbitration (which was in favour of foreign investors and investments by definition) simply because domestic capital could enter into partnerships with foreign capital to take a share of the supposed US$ 30 billion worth of foreign investments

(notably in the energy sector) for which the legislative reform was believed to make way. A few months later Parliament passed three constitutional amendments (Law no. 4446, 13/8/1999) in a difficult procedure that needs a two-thirds majority in a Parliament with 550 seats.

With the amendment to Article 125 Turkey accepts national and international arbitration for settling disputes arising from conditions and contracts under which concessions are granted by the state concerning public services and investments. The amendments to Articles 47 and 155 limit the scope of the administrative law in favour of the private law (in this case arbitration law), and by-pass the sanction of the Council of State regarding these concessions.

The amendments and related new laws have adopted the arbitration method only for disputes arising from public service concession contracts and conditions between the Turkish state and the investor. Generally speaking, infrastructure investments—such as bridges, tunnels, dams, water treatment, drainage systems, motorways, railways, airports and harbours—and electricity generation, transmission and distribution are regarded as public services in the Turkish law order, which means that if they are to be undertaken by private companies, it is only possible through concession conditions and contracts between the state and the investor. Before the amendments and new laws, administrative courts and the Council of State were seen as the mechanisms to be followed for the resolution of disputes between the state and the investor. The new legislation has, however, adopted arbitration proceedings functioning outside the jurisdiction of administrative law. Following these developments was the passing of the International Arbitration Law (No. 4686, 21/6/2001) in Parliament. This Law extends the scope of arbitration (which has become the settlement method not just for concession disputes but for any dispute the parties of which accept arbitration as the means of dispute settlement), establishes the rules for the constitution of the arbitral tribunal, arbitral proceedings and the award.

II

Surprisingly enough, the International Arbitration Law of 2001 did not face any opposition either from the public or the media. This silence was surprising because various groups had demonstrated against the 1999 arbitration laws that have regulated only concession disputes, rather than having generalised arbitration for foreign investments as in the International Arbitration Law of 2001. In 1999, trade unions, professional chambers, environmental organisations, the working group against the MAI, and other groups showed their strong opposition to international arbitration in massive demonstrations organised before and during the parliamentary sittings on the issue. Among the protestors were the people from the Bergama movement. It is necessary here to mention the Bergama movement, which has become a symbol of environmentalist resistance in Turkey, to show not only the sociological perception of arbitration but also the importance of administrative courts in protecting the environment.

The movement was organised in opposition to a noxious gold-mining investment by a multinationally-controlled company called Eurogold in the small town of Bergama (historically called 'Pergamon') in the early 1990s. It was because of the cyanide leaching method used for recovering gold and silver from the ore that the Bergama community saw the mine as a threat to life, the environment and their future. The community has been struggling for ten years against the mine by employing direct actions tactics and judicial mechanisms. For our purposes, the judicial struggle and its outcome is important. The judicial struggle started when a group of 794 Bergama villagers brought the case to court. As it was the Ministry of the Environment which, in response to Eurogold's demand, issued an act according to which there were no health and environmental drawbacks to constructing and operating the mine, they petitioned against the ministerial act at the İzmir Administrative Court (File nos. 1994/501 and 1994/643). At the end of the 4-year long judicial process, the final ruling emphasised that the ministerial act was in violation of the principles stipulated in Constitutional Article 17 that reads 'everyone has the right to life and the right to develop his/her material and spiritual entity', and Article 56 which reads 'everyone has the right to live in a healthy, decent environment. It is the duty of the state and citizens to improve the natural environment and to prevent environmental pollution' (the decision of the Council of State, file no. 1996/5477, decision no. 1997/2312, dated 13/5/1997). Although the government authorities were reluctant to act in accordance with the judgement, in the face of the court order and the resistance of the community they had to seal the plant in early 1999. The plant was ready to be operated as of 1997 according to the plant manager (*Milliyet daily*, 27/7/1997) but could not be put into operation because of the Bergama movement and the decision of the administrative court.

During the discussions on arbitration and the parliamentary sittings on the issue in 1999, participants in the Bergama movement suggested that arbitration

laws would render it possible for Eurogold to bring the case to an international arbitration tribunal and as a result it could put the mine into operation (*Cumhuriyet daily*, 25/7/1999; 16/8/1999). In fact, this was a misreading of the constitutional amendments and related arbitration laws of 1999 since the changes were merely confined to concession contracts as explained above. According to the Mining Law of 1985, mining activities as in Bergama are allowed not through concession contracts but through permits given by the Ministry of Energy and Natural Resources. Thus, it seems that the arbitration changes of 1999 cannot be employed in the Bergama case. However, what was not taken into consideration in this view is that there is some other evidence showing that it could yet be possible for Eurogold to take the case before an arbitration panel.

The first evidence is the international conventions approved by Turkey. First of all, it must be noted that according to Turkish Constitution Article 90 'international agreements duly put into effect carry the force of law. No appeal to the Constitutional Court can be made with regard to these agreements, on the grounds that they are unconstitutional'. The constitutional status of international agreements leads us to suggest that Turkey has already adopted arbitration for settling investment disputes since when the Washington Convention (*Official Gazette*, no. 20011, 6/12/1988) was duly put into effect in 1988 (see similar views in Birsel, 1998: 23-6; Duran, 1991: 170; Şanlı, 1998: 38-50; Tan, 1999: 14-6). The corollary of the approval of the Convention is that Turkey recognises the jurisdiction of the International Centre for Settlement of Investment Disputes (ICSID), established by the Convention, to settle any legal dispute arising directly out of *an investment*, between a contracting state and a national of another contracting state. The notion of investment is not described in detail in the Convention but it is argued in the literature that the notion encompasses any investment relation, such as capital contributions, service contracts, technology transfers and investment rights (Nomer, Ekşi, Gelgel, 2000: 57). Similarly, 43 bilateral investment agreements prepared by taking the Convention as a model and approved by Turkey define 'investments' in a broad sense, including (among other things) rights given by permits, contracts, concessions or decisions of the authority to search for, extract or exploit natural resources (see the website of Turkish Treasury at www.hazine.gov.tr/ english/ybsweb/yktk.htm). According to the Convention (Article 25/b), an investing company which has the nationality of the contracting state other than the state party to the dispute or an investing company which is controlled by foreign capital even though it has the nationality of the state party to the dispute, is considered as a 'national of another contracting state'. So, a company as such becomes the party to the dispute. One can conclude from these principles of the Convention that there is no legal obstacle to Eurogold taking the case to international arbitration with a claim for compensation as was established in accordance with the Law Concerning the Encouragement of Foreign Capital as a 'Turkish company' (see the petition of Eurogold's lawyer presented to the İzmir Administrative Court, dated 28/2/1995, p. 3) but controlled by the foreign capital groups, home states of which are parties to the Convention.

The second piece of evidence which also backs up the first can be found in the written statement by the Under-Secretariat of the Prime Ministry. According to the Prime Ministerial statement which instructed the related six ministries to do the necessary work in order that Eurogold could operate the mine, Eurogold's investment is a foreign investment subject to international arbitration (Circular no. B.02.0.MUS.0.13-263, dated 5/4/2000; *Cumhuriyet daily*, 23/6/2000; the *Turkish Daily News*, 23/6/2000). It was also reported in *Milliyet daily* (6/1/2001) that Eurogold had the right to file a claim for compensation of US$ 300 million. Following the evidence, what does seem clear is that both parties to the dispute agree on the fact that there is a case applicable to international arbitration. As a result, even the applicability of arbitration itself enabled the corporation to succeed without recourse to arbitration because, under the circumstances, the corporation has been allowed to operate the mine. In May 2001, production started by using 657 kilograms of cyanide a day to obtain 10 kilograms of gold and silver (*Hürriyet daily*, 28/5/2001; *Zaman daily*, 28/5/2001; *Milliyet daily*, 12/6/2001) in spite of the binding court decision ruling that the mining activity would be detrimental to human health and harmful to nature. The Bergama case shows that the possibility of instituting an international arbitral proceeding has paved the way for a noxious mining activity. One could draw a conclusion from the case that national judicial processes are better established in terms of environmental protection than international arbitration proceedings. This is a part of the fact that the latter is particularly established and institutionalised to protect trade, investments and investors rather than the environment, as examples of arbitration awards have shown, such as the tuna–dolphin decision of a GATT panel, the shrimp–turtle ruling of a WTO tribunal (French, 2000: 116-23) and the award of an ICSID arbitral tribunal regarding the dispute over a hazardous waste

landfill between Metalclad corporation and the United Mexican States (www.worldbank.org/icsid/-cases/mm-award-e.pdf). It is therefore understandable why environmentalists have been against international arbitration and in favour of national judicial remedies. However, the supposed national–international dichotomy presents a rather complex problem, as will be discussed below.

III

Sovereignty issues and environmental concerns have not adequately been considered in academic-theoretical debates on international arbitration in Turkey (e.g., Banka ve Ticaret Hukuku Araştırma Enstitüsü, 1999; Birsel, 1998; Nomer, Ekşi and Gelgel, 2000; Şanlı, 1990, 1998; Tan, 1999; Ünal, 1990; Yılmaz, 1990). These aspects of the question have, however, become the main points of objection raised by those opposed to international arbitration. Opposing views have emphasised that: international arbitration lets foreign capital restructure the sovereign Turkish state as a part of the 'imperialist kingdom of globalisation'; the implementation of international arbitration means environmental degradation, the resurrection of the capitulations [which were in force during Ottoman times and were abolished after the foundation of the Republic of Turkey], and the destruction of national independence; in our own country it will be no longer the Turkish public or national courts but foreign firms and their international tribunals that will hold the right to decide on investments.[128]

These views invite us to elaborate three related points. First, the opposition has, in general, proceeded in a nationalistic manner within which international arbitration is presented as the death of national independence, the fading away of national sovereignty, the end of the national state and the selling-off of national assets to foreigners. What has not been taken into consideration in these views is the combination of international and national dynamics, and the relationship between the national state and international/national capital. Underlying the nationalistic idea is an attribution of 'all the evils' in the country to foreigners, so much so that there were even some members of the Bergama community who suggested that the mine should be operated by a Turkish company (*Zaman daily*, 17/7/1997) as if this would ensure that there would be no harm to people or nature. This sort of nationalistic perspective is not particular to Turkey. There is no doubt that multinational corporations tend to relocate their noxious activities in underdeveloped countries, as is well documented in many works (Asente-Duah and Nagy, 1998: 78-80; French, 2000: 71-86; Karliner, 1997: 148-59; Low and Yeats, 1992: 93-102; and Lucas, Wheeler and Hettige, 1992: 67-80). To resist the displacement of pollution as such is of primary importance in protecting the environment and public health. The bias or prejudice against multinationals might help raise public environmental concern about their polluting activities in particular locales.

However, the prejudicial advocacy of the national bourgeoisie might, in turn, obscure the fact that it is not the nationality of capital but capitalist accumulation (a process of configuration of various elements including domestic and foreign capital and the state) that is likely to degrade the environment. The view that national companies should have a privileged position vis-à-vis international capital since they contribute to national independence and use natural resources in an environmentally friendly way is problematic in the face of evidence showing that the Turkish bourgeoisie supported international arbitration. Besides, those companies which polluted, for instance, Turkey's rivers and seas for years (Somersan, 1993: 143-68) were national companies. The national Turkish state itself, upholding national independence and sovereignty, has been producing silver for years by using 600 tons of cyanide a year at the state-owned mining plant in a Turkish village (Dulkadir-Tavşanlı). There it was found (Özdemir, 1993) that there have been many unusual deaths from very high rates of lung and skin cancer, and deaths without 'specific reason'. More importantly, the nationalistic-statist point of view that dominated the argument against the introduction of international arbitration into Turkish legislation is also problematic in that they see the state as an apparatus in itself immune from mediation with domestic capital, but under the threat of the 'globalisation of capital'. Here, the state is seen as a 'victim' of globalisation as well as a 'saviour' if it retains and defends sovereignty, territorial integrity and independence. However, the state is neither a victim nor a saviour but has a symbiotic relationship with domestic and international capital and a part in the process of the internationalisation of capital.

Without recourse to Marxist theories of the state, the role of the state as a 'partner, catalyst, and facilitator' in capitalist accumulation processes can yet be shown by drawing on the analysis of the *World Development Report 1997* published by the World Bank (1997), a long-term supporter of a neoliberal political project.

[128] Deveci, 2000: 78-9; KİGEM, 1997: 14-24; Minibaş, 2001: 64; Soysal and Ertuğrul, 2000: 38; *Cumhuriyet daily*, 24/7/1999, 25/7/1999, 16/8/1999, 17/11/1999.

Criticising the view that pits state against capital, the Report suggest that 'the state is essential for putting in place the appropriate institutional foundations for markets' (World Bank, 1997: 4) by ensuring social order, establishing the foundations of law, providing the conditions for a well-working judicial system, protecting property rights, maintaining a business environment including macroeconomic and political stability, investing in physical infrastructure, building industrial policy designed to foster markets, and developing domestic policies and institutions for more openness to the world economy and more responsiveness to international economic integration. Suffice it to say that far from being a victim or saviour the state, to use the Marxist terminology, plays an essential role in the process of the reproduction of capitalist relations of production by depicting its conditions as constituents of the productive relations themselves (Wood, 1981: 79). The forms of particular judicial systems such as arbitration are constituents as well as institutions of internationally-organised economic relations.

The fact that international arbitration takes place outside national territory and outside the national judicial system does not necessarily mark the fading away of sovereignty. This is because, first, there is the existence of an enormously elaborate body of national and international law that secures the exclusive territory and sovereignty of the national state within and outside its jurisdiction. Second, it is the sovereign state itself that accepts the competence of the international private arbitral tribunal or produces and legitimises a nationally acting arbitration system outside the public justice regime but inside the national territory. Third, specific international institutions as sets of rules (e.g., the Ozone Treaty), economic processes (e.g., physical infrastructure, tax regime, managing labour markets and controlling labour resistance) and environmental processes (e.g., countries usually meet their water demands with their own water resources available within their national borders (Fischer-Kowalski and Haberl, 1997)), all these, though having important international implications and articulations, materialise in national territories as geographical and institutional arrangements. It is because of this national level of materialisation that sovereign national states have become deeply involved in the implementation of international economic and environmental rules by making changes in the legal system (e.g., arbitration) as well as in the economic structure (e.g., liberalisation, privatisation, re-regulation of the economy and so on). Then, the more significant question is not whether or not international arbitration marks the end of sovereignty but in what politico-economic structure sovereignty functions[129]. The role of the state in the formation, expansion and review of the legal forms that bypass national legal systems or/and privatise the justice system is to bring about the intersection of national law and the present requirements of capital. The internationalisation of capital imposes tension on the institution of sovereignty towards serving capitalist interests so as to mobilise capital further. The further mobilisation of capital requires the creation of new judicial methods such as arbitration which secures the capital's rights. This process is pointing to a new content for sovereignty as an institution: it is assuming a new form as having turned into a complete means to serve private ends, i.e., the interests of national and international capital. We shall elaborate on this in the third point below while discussing how private ends are realised in the new judicial regimes that consolidate the position of some groups and classes in relation to those of others.

The second point to be addressed about international arbitration concerns the role of the international domain. It is true, to some extent, that international arbitration is at odds with national independence in the sense that it brings a dual system of judicial law into being, so to speak, a capitulation that allows investors to sue the state at international judicial panels outside the realm of the national judicial system. What is missing in this interpretation, however, is that the international cannot be conceived of as being a 'good' or a 'bad' thing in itself in terms of national independence and sovereignty. One might, for instance, remember the contribution of international tribunals to advances in 'national' human rights law. Similarly, the international domain strengthens national sovereignty regarding environmental issues in many cases, such as the extension of territorial waters (exclusive economic zone) as a geographical expansion of the nation-state (Litfin, 1993: 105) and the UNCED Statement of Forest Principles that reinforces states' sovereign rights to forests (Elliott, 1998: 87). However, in all these cases international practice also restricts, to a lesser degree, the nation's activities in order to establish some protective arrangements in favour of human rights, exclusive economic zones and forests. Beyond any judgements of 'good' or 'bad', the international domain has, then, two facets with 'enabling' and 'regulatory' functions, as explored by Levy and Egan (1998: 338). The enabling function provides the infrastructure of the

[129] For instance, Christopher Clapham (1999) draws attention to the function of sovereignty as a device to serve ruling elites for the entrenchment of their control over the rest of the population in the formerly colonial states in Africa, Asia, the Pacific and the Caribbean.

world trade, finance and investment regime with a trend towards liberalisation, by means of international rules and regimes that further mobilise capital in its operations world-wide. The regulatory function tends to establish internationally uniform environmental principles and regulations that, by definition, lead to establish environmentally sound obligations on the state and the industry. With regard to the regulatory function, international institutions have undoubtedly contributed to the development of Turkish environmental regulations and policies. Turkey has not only ratified various international environmental conventions, treaties, agreements, declarations and protocols but also, to some extent, modified its national environmental policies accordingly (Keleş and Hamamcı, 1993; OECD, 1999; Pazarcı, 1987; Türk—AT Mevzuat Uyumu Sürekli Özel İhtisas Komisyonu, 1997). It was, for instance, just after the Stockholm Conference that Turkey, as a signatory of the Stockholm Declaration, adopted an objective of environmental protection in the national development plan (DPT, 1973: 120-1) as binding for the public sector and stimulating for the private sector. And similarly, sustainable development came to the fore in Turkish environmental policy priorities drawn up in conjunction with the plan (DPT, 1989: 312-13) just after the Brundtland Report.

On the other side of the coin, the enabling function of international institutions has contributed to the further liberalisation of the Turkish economy (see Kazgan, 1994: 183-259), and in turn to the further destruction of the environment and the further exploitation of natural resources, as in the case of international arbitration. While the constitutional amendments bill was under scrutiny in the sub-commissions of Parliament, the Trabzon Administrative Court made a decision that a hydroelectric plant that was going to be built by a Turkish company in a protected natural park was incompatible with the Environmental Law. After the court's decision, the company entered into partnership with two foreign companies, aiming for international arbitration review, so as to carry on the environmentally destructive project (*Cumhuriyet daily*, 21/7/1999). Here we have to emphasise that, if there is anything to blame for economic liberalisation, it is not merely the international terrain but rather the dialectic between the national and the international. One could remark that just as it is accurate to suggest that the transition of Turkey from an inward economy to a more liberal economy with the adoption of the rules of the capitalist world economy has essentially been the result of the changes taking place since the mid-1980s in the domestic politico-economic structure (Öniş, 1996), so it is also accurate to argue that there has been a push from international institutions including the IMF, the World Bank, GATT and MAI-like international regulations towards the liberalisation of the Turkish economy.

The third point regarding international arbitration raises the problem of recourse to judicial review within and outside national tribunals' jurisdiction. Litigation is a common means used by environmental and community movements[130] all over the world from the US (Edwards, 1995: 46), Ecuador (Gedicks, 1995: 101-2) to India (Birnie and Boyle, 1992: 195), and to Turkey (Demircioğlu et al., 1986; Kaboğlu, 1996: 115-33; Turgut, 1998: 291-99). It may be a lawsuit for compensation for actual environmental damage and for detrimental effects on human health as in the case of the suit filed by 981 workers living in Costa Rica against Shell and Dow Chemical in Texas courts in the US (the workers won a US$ 20 million compensation) (Greer and Bruno, 1996: 56). Or it may be a legal action against decisions and actions detrimental to nature and humans before the imminent harm takes place, as in the Bergama case. What is crucial in terms of environmental protection and the right to life in the latter is the enhanced participation of individuals and groups in environmental decision-making via judicial review. Litigation makes it possible for individuals and groups to make use of national judicial systems and judicial remedies. To seek review of governmental actions and acts secures for citizens rights of access to administrative and judicial remedies and to participation in decision-making processes as well as serving as a means of making public bodies accountable for their actions under law (Birnie and Boyle, 1992: 194-96).

In this context, the constitutional amendments and new legislation in Turkey abolished the right to recourse to administrative judicial review of environmentally unfriendly investments allowed by the state. To put it simply, according to the new law, if arbitration is provided for a possible dispute, environmentally concerned citizens can no longer bring a case to administrative courts and the Council of State which have made landmark decisions devoted to environmental protection, such as the Aliaga decision (Anadol, 1991) and the Bergama decision. While access to judicial remedies has been limited for environmentally concerned people, corporations are endowed with the right to seek judicial review at

[130] Corporations, too, take civil court actions against environmentally concerned citizens who oppose corporations' plans and operations. These lawsuits are called 'strategic lawsuits against public participation'. For some examples, see Beder, 1997: 63-74.

arbitration tribunals to which local communities and environmental groups have no access. In the name of capital flows, this is a violation of not only the right to recourse to judicial review, but also the universal and Turkish constitutional principle (Article 10), 'equality before the law', which reads: 'all are equal before the law… No privilege shall be granted to any individual, family, group or class.' The great danger embedded in the jurisdictional shift from the realm of public law providing access for all, to the realm of private arbitration proceedings providing access for only corporations, lies within the fact that arbitration in its present form serves to consolidate the domination of the capitalist class over other classes, groups and communities. The corollary of this would be further exploitation and destruction of the environment.

IV

This article analyses in the Turkish case the effects of the international arbitration method on the institution of sovereignty on the one hand, and on the environment on the other. The discussion about the modifications in the institution of sovereignty to meet the requirements of capital more overtly was made in the paper particularly in terms of the creation and expansion of new judicial practices in Turkey, namely the arbitration method. The analysis has hopefully shown that international arbitration does not mark the end of sovereignty but the consolidation of the power of the capitalist classes. The institution of sovereignty is not vanishing or fading away but gaining a new content to adapt to challenges arising out of the internationalisation of capital which brings about the need for innovations in judicial processes. Arbitration is the kind of an innovation which allows multinational corporations to escape from judicial jurisdiction of sovereign states and submit to private arbitral tribunals. As it is established to protect the rights of capital not the right to the environment, arbitration has adverse consequences for environmental protection. As was discussed above, the environment is at stake not because of the fading away of sovereignty as a result of destructive effects of international processes and dynamics, but because of the new content of it within which sovereign rights are more appropriately used to protect investments and investors' rights no matter how detrimental they may be to the environment.

As far as the Turkish case is concerned, sovereignty is becoming a complete means to serve capitalist ends and thereby the class pertinence of the institution is becoming more transparent. Thus seen, this also has implications for state legitimacy. The fact that the right to recourse to judicial review within and outside national jurisdiction is being limited for some groups and classes but particular dispute resolution arrangements are formed for some other groups and classes is likely to undermine the discourse of abstract, formal, general and non-discriminative law and judicial practices. This discourse is a pillar of state legitimacy as an important factor in organising the consent of the population and at the same time this law is a constituent of 'national unity' as it 'institutes individuals as juridico-political subjects-persons by representing their unity in the people-nation' (Poulantzas, 1980: 86-7). When supposedly abstract, formal, general and non-discriminative law and judicial practices discriminate against a group of people and in favour of another group of people (i.e., all are not equal before the law), state legitimacy and the political unity of the social formation are to be called into question. As a result, the political authority and the social recognition of state legitimacy, in turn, sovereign claims of the state are likely to be questioned by the dominated classes and groups. It remains to be seen whether the problem of sovereignty will turn into that of legitimacy.

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Thirty Years After Stockholm: What Role for State Sovereignty?

*By Cornis van der Lugt**

When governments met in Stockholm at the UN Conference on the Human Environment (UNCHE) in 1972, it was agreed that states have "the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction" (Principle 21, 1972 Stockholm Declaration).[131] It can be argued that the Stockholm Declaration reiterated the absolute impermeability of the boundaries of states as a condition of protecting the environment (Lipschutz, 1998: 129). The related "ecology sovereignty debate" (Conca, 1994; Litfin, 1997/8) has taken on renewed importance in discussions about global or international environmental governance (IEG). as we prepare for the World Summit on Sustainable Development (WSSD) in Johannesburg. This article joins the debate by assessing emerging practice with respect to state sovereignty in global efforts to protect the environment and advance sustainable development. We start be redefining sovereignty and providing a brief overview of the IEG debate.

The ecological critique of state sovereignty accuses it of lending an anarchical quality to the international system; enhancing fragmentation and conflict at a time when unity, co-operation and co-ordination is needed; hindering a proper division of labour throughout the world and the appearance of more appropriate political units. Reference is often made to obstruction caused by state sovereignty in decision-making and enforcement under multilateral environmental agreements. More often than not, consensus decision-making at the COPs of multilateral environmental agreements results in least common denominators that fail to establish the level of precautionary action needed, with laggard states determining the overall pace of action.[132]

The question is what definition of state sovereignty is being used in this critique. The related question is whether state sovereignty as organising principle is the real problem, or whether the problem lies elsewhere? If state sovereignty proves to be the problem, three response remedies can be considered: (a) assign sovereignty to an institution other than the state, (b) do away with state sovereignty, or (c) redefine state sovereignty. Whatever organisational units or bodies with jurisdictional areas different to that of existing states are involved, between them there will remain differences in eco-geographical realities, different environmental vulnerabilities, different economic interests, difference in expert advice given, differences in the role played by public authority, differences in political culture and public opinion, and differing involvement in other forms of co-operation. For this reason the approach taken here is to redefine sovereignty. Mindful of the call to avoid seeking idealtype definitions, rather than focusing on actual practices, the definition used here will separate "state" and "sovereignty" and attempt to reflect current practice more closely.

In this article "sovereignty" is defined as *constitutional independence qualified by concomitant governing rights and duties.*[133] This definition is not an absolutist one, though legalist or formalist in terms of referring to legally constituted rights and duties.

Environmental governance: new demands for institutional innovation

During what has been called the second wave of global environmental awareness in the late 1980s, there was a fear that the aggravation of environmental threats would result, amongst others, in an international institutional "organisational crisis" (Plant, 1990: 413; 1992: 123). At a time when the world appeared to be "on the verge of a major period of international law making in the environmental field", there seemed to be the need for "a new and equally imaginative burst of institutional creation" (Chayes and Chayes, 1991: 308).[134] Some proposed an eighth committee on

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131 They reiterated the same position twenty years later at the UN Conference on Environment and Development (UNCED) in Rio de Janeiro, adding "pursuant to their own environmental *and development* policies".

132 See Miller (1981: 17); Sand (1991: 240); Thomas (1992: Ch 1); Camilleri and Falk (1992: 179); Levy et.al. (1993: 415—417); Chayes and Chayes (1995: Ch 2).

133 See Van der Lugt (2000), following James (1986) and Hinsley (1986).

134 Tuchman Mathews (1993: 32/3) believed that more treaties may be most valuable in setting up a binding decision-making process (rather than merely the usual defining of performance standards), since "(i)f science can reshape how we perceive

the environment in the UN, others the creation of an Environmental Security Council and Environmental Court of Justice, the transformation of the UN's Trusteeship Council into an Environmental Trusteeship Council, or the creation of an Earth Council or World Environment and Development Forum (MacNeill et al., 1991: 122—127; Porter et al., 1991: Ch 5). The UN Secretary-General's 1997 UN reform proposals included the suggestion that the Trusteeship Council be transformed into a forum to deal with the global commons and global environmental issues, involving cross-border problems or—as Kofi Annan called them—"problems without passports" ("Unravelling the UN", *Financial Times,* 17 October 1997).

In the current debate, arguments for a world environment organisation (see Biermann, 2000: 24-26; Biermann and Simonis, 2000: 169-174, cf. Gehring and Oberthür, 2000: 200-205) refer to (i) the need for better co-ordination of global environmental governance, (ii) improve financial, technology and know-how transfer, and (iii) better development and implementation of international environmental law. The ability of the United Nations Environment Programme (UNEP) to do this is said to be limited, as a result of its status as quasi-autonomous subsidiary organ of the UNGA[135], its limited resources and competencies. An additional drawback of UNEP, as well as the Commission on Sustainable Development (CSD), is said to be its involvement of mainly environment and development ministers and officials. Efforts to deal with sustainable development require greater involvement of others ministries such as those for trade and finance.

THE MINISTERIAL DEBATE CONVENED BY UNEP'S GOVERNING COUNCIL

Decision 21/21 of the UNEP Governing Council called for a comprehensive policy-oriented assessment of existing institutional weaknesses, as well as future needs and options for strengthened environmental governance, including the financing of UNEP. This follows the 1997 Nairobi Declaration, endorsed by the UN General Assembly, which established UNEP as the "principle UN body in the field of the environment", and the 1998 Task Force appointed by the UN Secretary-General which recommended the creation of an Environmental Management Group in the UN and a Global Ministerial Environment Forum (GMEF). The call for a strengthened UNEP with a broadened financial base was reiterated in the Malmö Declaration of the first GMEF, held in May 2000.

Decision 21/21 also called for the creation of an Open-Ended Intergovernmental Group of Ministers (IGM) on IEG. The IGM met four times in 2001. In a report on IEG by the UNEP Executive Director to the first meeting of the IGM, the following weaknesses were identified: inadequate and fragmented institutional arrangements, inadequate policy co-ordination, inadequate mechanisms to translate existing commitments into action, and inadequate resources (UNEP/IGM/1/2).

At the third meeting of the IGM in Algiers, September 2001, participants agreed that the following are the key "building blocks" for improved IEG:

- improving coherence in policy-making (role and structure of the GMEF),
- strengthening the role, authority and financial situation of UNEP,
- improved co-ordination and coherence between multilateral environmental agreements,
- enhanced co-ordination across the UN system (role of the EMG),
- capacity building, technology transfer, finance, and
- embedding sustainable development in IEG.

The role and structure of the GMEF, as opposed to the UNEP Governing Council and the CSD, has caused considerable debate. Whilst the Governing Council has a limited membership of 58 ministers, participation in the GMEF is open to all. The Group of 77 (G77) and China has been somewhat sceptical of enhancing the role and authority of the GMEF to act as an "umbrella environmental policy forum" (*Earth Negotiations Bulletin*, Summary of IGM3, 12 September 2001).[136] South Africa, host of the WSSD in 2002, has been more forthcoming in supporting the role of the GMEF as overarching political vehicle

man's role on the planet, then institutional changes can pave the way to new policies and economic behaviour".

[135] UNEP was established in 1972 by UN General Assembly resolution 2997, following the Stockholm UNCHE. The operational efficiency of UNEP has improved significantly since new Executive Director Klaus Töpfer introduced a functional structure to its organisation in the late 1990s. Today UNEP also chairs the newly created Environmental Management Group (EMG), which has the task to improve the co-ordination of environment-related activities in the UN system.

[136] The G77 and China commissioned research papers on IEG from the South Centre and the Third World Network. In its background note on IEG, the South Centre (2001) looked back at the legacy of Stockholm and Rio and emphasised four points to guide discussions on IEG: the environment—development link, North-South differentiation, common and public interests, as well as holistic, multisectoral and multidisciplinary approaches. In its working paper, the Third World Network (2001) identified three key principles for the IEG debate: the context of governance is sustainable development, the principle of common but differentiated responsibility, and meaningful participation by developing countries.

that is linked with key UN sponsored multilateral environmental agreements (cf. Van der Lugt, 2001). The question is how much authority member states are willing to give to the GMEF. Will the GMEF be:

- a forum for dialogue,
- an advisory body,
- a co-ordinating body,
- a guiding body for clustered multilateral environmental agreements,
- a policy making body?

Will more dialogue, more co-ordination and clustering be enough to improve IEG? Or does improved IEG require more allocation of sovereign rights and duties at the supranational level? Discussing the limits of international environmental agreements, Hurrell and Kingsbury (1992: 23) referred to "the abiding constraints of the state system and the fundamental fact that, in a decentralised legal system, no obligation can be imposed". Would a more centralised system therefore be the solution? Would drawing sovereign states into larger units contribute to greater unity, therefore greater co-operation and co-ordination, greater compliance and ultimately better "management" of environmental problems on a global scale? Tudyka (1988: 13) posed the anti-thesis: The more internationally the regulation of environmental problems is sought, the less appropriate such regulations would be. Ultimately, international regulations always need to be referred back to national regulation in order to become effective.[137] Some have warned against countries getting trapped in a "same boat ideology" under the influence of which world summits serve to accelerate the process towards global management, a world technocracy managing so-called 'environmental' risks. Asking that we resist "green globalism", Lohmann (1993: 158) spoke of a new kind of colonialism in which "green globalists" perpetuate Northern dominance (cultural/industrial hegemony) under the pretence of "the global environmental good".

Related to questions of centralisation or decentralisation is the issue of substantive linkaging. In a research paper for the G77 and China, the South Centre has accused Northern countries of having worked against a holistic approach and playing down the link with development. It argued that the Rio Earth Summit marked a welcome return to an integrated approach, which was soon to come under severe pressure from a rising tide of globalisation and liberalisation (South Centre, 2001: 8). Globalisation, rooted in neoliberal premises, has brought about a situation in which weak countries are subjected to "governance" with mainly their sovereignty being circumscribed.

Central in the "boundary questions" related to IEG is not only vertical questions of the *appropriate level of governance*, but also horizontal questions related to *subject or issue area and, accordingly, role definition* (of actors, institutions). The latter relates to relations between UN agencies as well as relations between multilateral environmental agreements. Furthermore, the issue of role definition is also at stake when weighing "public and private governance" (Abbott and Snidal, 2001). The following two sections will focus on substantive linkaging, exploring proposals for issue clustering and highlighting different role definitions as exemplified in different international regime types.

Clustering multilateral environmental agreements

Reference is often made to fragmentation as a result of an unforeseen increase in multilateral environmental agreements between which there is overlap and at times contradictory requirements. In the current IEG discussions it has been proposed to cluster multilateral environmental agreements in order to enhance co-ordination, coherence and synergies in overlapping issue areas.[138] Co-ordinating such clustering, UNEP may be in a better position to find a solution where the requirements of multilateral environmental agreements conflict with those of the WTO.[139] The latter has identified 33 multilateral environmental agreements that have trade implications (WTO, 2000). Over the last two years UNEP has increased its co-operation in Geneva with the WTO and UNCTAD in the field of trade, environment and development. Initial joint meetings have been held on the topic of enhanced synergies between multilateral environmental agreements and the WTO. Clearly, a solution to conflicting requirements need to be found, among others to avoid "forum shopping"

[137] The latter is, however, an argument that underplays the qualitative difference between policy *formulation* and *implementation*. It cannot be taken for granted that a prominent role by the state in implementation is equalled by a prominent role in policy formulation.

[138] The Third World Network (2001: 15) notes that co-location of MEA secretariats or clustering of MEAs can have the advantage of streamlined governance, the reduction in transaction costs through better institutionalisation and the pooling of resources. At the same time, its warns against "top-down co-ordination".

[139] One example is that of biodiversity, where the CBD established a new type of property rights regime in which state sovereignty is used to counterbalance intellectual property rights as determined under the TRIPS agreement (Rosendal, 2001: 107).

(Krist, 2001: 10).[140]

During an expert consultation on IEG with a group of academics, held in Cambridge (UK) in May 2001, the clustering of multilateral environmental agreements was one of the pressing issues highlighted. One participant described the challenge of "matching a problem structure and its institutional fit" (*Sustainable Developments*, "Summary of the Expert Consultations", 7 June 2001). Discussion showed agreement on the need to cluster multilateral environmental agreements to exploit synergies, capture linkages and avoid conflicting decisions. In a recent survey by UNEP of multilateral environmental agreements, their secretariats underlined the importance of UNEP in promoting, facilitating and nurturing thematic and programmatic co-operation among multilateral environmental agreements, addressing also the monitoring of implementation (UNEP/IGM/1/INF/3, April 2001: vi; cf. UNEP/IGM/1/2, April 2001: 29). At the same time most responses focused on co-ordination among multilateral environmental agreements on substantive grounds without going so far as supporting institutional restructuring.

It remains to be decided in what form and on what basis clustering will be done. Participants in the Cambridge consultation discussed *physical* clustering (co-location of secretariats), *administrative* clustering (joint co-ordination of related multilateral environmental agreements), *regional* clustering, clustering by *function*, clustering by *subject area*, clustering by *source of environmental harm* and clustering by *scientific research*. Emphasis on subregional linkages and priority setting from the bottom up showed support for the principle of subsidiarity. The regional dimension is central if one considers that of the 302 international agreements related to the environment that have been negotiated since 1972, nearly 70% are regional in scope (UNEP/IGM/1/INF/3, April 2001). Of these, the 17 regional seas conventions and action plans represent the largest cluster. Increasingly the global multilateral environmental agreements are also setting up regional centres to assist with implementation and training.[141]

The over 500 international environmental agreements that exist today can be divided into three categories (see UNEP/IGM/1/INF/3, April 2001): global environmental agreements related to UNEP, global agreements negotiated independently of UNEP, and other agreements that are more restricted in terms of scope and geographical range. The secretariats of most of the core global conventions and regional conventions of global significance are provided by six UN organisations: namely UNEP, International Maritime Organisation (IMO), UN General Secretariat, Food and Agriculture Organisation (FAO), International Labour Organisation (ILO) and International Atomic Energy Agency (IAEA).[142] An interagency mechanism to advance collaboration between multilateral environmental agreements would have to involve these six UN bodies as core group.

Defining roles: regulatory, market and voluntary approaches

Mechanisms devised by the international community to institutionalise global responsibility in the environmental field can be categorised as liability or regulatory regimes (see Wapner, 1998: 280—283). Regulatory regimes are more proactive in that they focus not only on individual instances of transboundary harm, but also curb practices of states that accumulatively cause environmental harm. Yet they still tend to privilege state rights over responsibilities or duties.

If we make the analogy with domestic policy approaches to environmental policy, we see in international regulatory regimes examples of both a command and control approach and an economic instruments approach. Greater use of economic instruments can be seen in instruments such as trade measures (cf. Montreal Protocol) and emissions trading (cf. Kyoto Protocol).[143] At the regional level this can be seen in proposals for eco-taxing and the contemporary shift away from command and control that Golub (1997) identified in environmental governance in the EU. In addition to these two approaches under regulatory or, following Nadelmann (1990), prohibition regimes, a third possibility of increasing significance is that of international voluntary initiatives. These can be dubbed "voluntary regimes", some would say "private governance" or "public policy networks" (see Reinecke, 1999, 1998; Reinecke and

[140] Warning that the WTO currently has a de facto dominance over MEAs which relegates international environmental policy to a secondary role, Kirst (2001: 3) among others proposed that for those MEAs whose parties account for 85% or more of world trade, the WTO would completely defer all disputes regarding the MEA to the MEA. This however does not provide a solution for (sub)regional MEAs who may have legitimate regional concerns but represent much less than 85% of world trade.

[141] Regional training centres under the Basel Convention can for example also be used to train customs officials involved in the effort to combat illegal trade in ozone depleting substances.

[142] Of 41 core MEAs, UNEP provides the secretariats of 22, which include 12 of the 18 global MEAs and 10 of the 22 regional MEAs.

[143] A recent report by UNEP on the role of MEAs in international environmental governance included in its list of issues that need to be addressed more effectively by MEAs "economic instruments and incentives" as well as "quantifying and publicising the economic benefits of good environmental practices" (UNEP/IGM/1/INF/3, April 2001).

Deng, 2000; Thatcher, 1998; Chisholm, 1998). The arrival of international regime theory in the 1980s was meant to fill the gaps and add the clarity that theories about international organisations in global governance seemed unable to provide. More recent theorising about transnational governance in the form of "interorganisational networks" attempts to fill the gaps left by international regime theory, among others by moving beyond a state centric approach.

REGULATORY OR PROHIBITION REGIMES

The environmental *problematique* or "global ecological crisis" seems to underline the need for public authority to take action. Hurrell (1994: 151) pointed to the possibility that the environmental challenge can serve, not to undermine, but to reinforce the centrality of the state, whilst ecological interdependence increasingly forces states to co-operate. An awareness of the managerial weakness of the state on environmental matters may lead to efforts to strengthen state capacity, possibly utilising tools that run counter to the expansionist logic of capitalism—such as centralised policy instruments that are based on command and control approaches. Consequently, environmental protection comes to be seen as part of so-called "new social regulation". Apparently the management of global environmental problems cannot simply be left to markets to resolve, but require extensive governmental involvement (Deudney, 1993: 286).[144]

The role of public authority at different levels becomes more imperative once transboundary pollution and common pool resource problems lead to tension and conflict, with ecological security focusing attention on cases where for example adjacent countries intervene in each other's economies through the effect of transboundary pollution. An attempt to address this problem calls for a role by public authority at a higher (above-state) level, confirming that transboundary pollution gives a new dimension to the dialectic between above-state necessities and national constitutional claims. As Kaiser (1969: 100) reported in the 1960s, those areas of transnational society that are linked with the maximisation of welfare display a tendency by governments to regulate through interstate co-operation (at times in institutional form) governmental policies that are adversely affected by events in related areas of the transnational society.

In various proposals since the 1980s for the reform of existing or creation of new international institutions, the implicit assumption has often been the need for (global) public regulation. Porter et al. (1991: Ch 5) spoke of "the global governance approach" to global environmental co-operation, as opposed to the incremental change and the global partnership approaches. Our definition of sovereignty allows for a functionalist division of responsibilities between various levels of governance, as required by the need for "public authority" to be exercised at various levels. The role of public authority is supported by the need to protect and to promote collective goods, whilst steering away from the prospect of market failure. History has shown that neither the hidden hand of the free market nor the prominent hand of the socialist state can be relied upon solely to secure the good of environmental protection. In Western Europe the outcome of this realisation has been, as described by Buller et al. (1993), that countries with their own historical approaches to environmental management were finding these approaches increasingly challenged by the regulatory style of a European policy making structure. At the global level, as we have seen above, countries have been faced with a drastic increase in multilateral environmental agreements and increasing density in international environmental law since 1972.

VOLUNTARY REGIMES, PARTNERSHIPS, NETWORKS

Voluntary initiatives are non-legislatively required commitments or obligations agreed to by one or more organisations, often by companies making commitments to improve their environmental performance beyond legal requirements (see Webb, 1999; OECD, 1999 and Utting, 2000: 29—32). International voluntary initiatives has been described by Langley (2001: 87—89) as reflecting a neo-liberal vision where "a-political" market institutions are seen as the appropriate institutional loci for governance. An alternative view is the liberal internationalist vision, which would argue for state-based command and control governance. The neo-liberal vision tends to underestimate the extent of ecological limits, based on its faith in new technologies. Yet Langley (2001: 92) saw a partial privatisation of global environmental governance underway, as the institutional loci of governance shifts away from state institutions and intra-institutional systems of self-regulation (read voluntary initiatives) occupy positions of greater importance. We therefore see a growing "public role for the private sector" (Haufler, 2001: Ch 2). Noting that standards are a pervasive mechanism of international governance, Abbott and Snidal (2001: 355—356) reported that both firms and governments increasingly prefer private standard setting since private

[144] Conca (1993: 319) noted that the ability of the sovereign states system to manage the world economy in ways that support the global extension of capitalism, may not be matched by its ability to manage the global environment toward similar ends.

actors have superior information regarding production processes, private actors are more flexible in responding to technological and market trends, and private producers can best ensure that standards are actually implemented. At the same time, affected actors will seek public intervention when private standard setting creates negative externalities. Government may prefer to rely on those affected to act in the public interest, as can be seen in the arrival of the so-called "consumer-citizen". Examining the new consumer and shareholder activism in Europe, Parker (1999: 71) argued that government "increasingly relies on the individual, the consumer-citizen, to regulate private business". Greater pressure from consumer-citizens has moved more businesses to take moral or ethical positions and acknowledge social responsibilities.[145]

In addition to consumer pressure, questions from investors and shareholders also confirm that the business case for sustainability is becoming clear (see UNEP/SustainAbility, 2001). Global companies increasingly face questions from ethical or socially responsible investment funds. New indices such as the Dow Jones Sustainability Group Index and the FTSE4Good Index are moving global companies to follow a more integrated sustainability approach, the so-called "triple bottom line" approach. This is where social responsibility of business becomes a "near rational" economic choice, as noted in a recent UNSG Report on Business and Development (UNGA, A/56/442, 2001: 11). Corporate citizenship is therefore more than traditional corporate philantrophy (cf. UNCTAD, 1999: 3).

A global voluntary initiative that has caused considerable debate over the last two years has been the Global Compact of the UN Secretary-General. Described by *Christian Science Monitor* as Kofi Annan's "most creative reinvention yet" of the UN, the Global Compact is a voluntary initiative in the shape of a network form of organisation (Ruggie, 2001). It seeks to induce institutional change and learning in corporations through identifying and promoting good practices. Launching the Global Compact in 1999, Kofi Annan asked world business to be pro-active in displaying global corporate citizenship.[146] Having benefited from liberalisation in the world economy, business and industry need to show greater responsibility as we realise that for the market to thrive and survive, it needs to be imbedded in social values and shared objectives. Kofi Annan has argued that global markets require global responsibilities.

The Global Compact has of course also been confronted with suspicion. Kapstein (2001) has warned that its impact may harm the small players, overwhelmed by big business and big NGOs from the industrialised world. Addressing private-public sector collaboration, the Third World Network (2001: 20) has emphasised the "need for ensuring independence of public policy and governance from undue influence by the private sector". This concern is enhanced by the sheer size of multinational corporations (MNCs). It has been estimated that 51 of the world's 100 largest economic entities are corporations, while only 49 are countries (Frankel, 2001: 46). The revised OECD Guidelines for Multinational Enterprises is therefore of key importance, yet questions remain with respect to the effectiveness of their implementation in different countries, OECD and non-OECD. International public policy networks, voluntary initiatives and project-based partnerships represent a more flexible engagement of business.

There is a growing recognition of the added value of "public-private partnerships" and co-operation between the UN and non-governmental role-players. Some refer to the emergence of co-regulation, following the emphasis on command and control regulation in the 1960s and 1970s and self-regulation in the 1980s and 1990s. Public-private partnerships has been the subject of a special report to the UN General Assembly in 2001. In response to a request of the General Assembly (resolution 55/215 of 21 December 2000) the Secretary-General tabled a report to UNGA50 on "Co-operation between the United Nations and all relevant partners, in particular the private sector" (UNGA A/56/323). Based on interviews with governments, agencies, business and many other civil society organisations, it identified potential benefits of co-operation between the UN and the private sector. These included risk management, defining boundaries (of roles and responsibilities) and overcoming bureaucracy. Its discussion of governance risks mentioned the concern raised by some NGOs that "voluntary, partnership-based approaches

[145] The proactive and leadership role of individual businesses, often in response to shock events such as industrial accidents, contrasts to the preference of laggards to hide behind lowest common denominators as defined collectively in their industry associations (see SustainAbility and GPC, 2001). UNEP hosts an annual consultative meeting in Paris with industry associations to focus on constructive contributions and challenges. Associations can be crucial allies in involving smaller companies, in particular those from the developing world (cf UNGA A/56/323, 2001: 38).

[146] See the Secretary-General's speech at the World Economic Forum, Davos, Switzerland, 31 January 1999, www.unglobalcompact.org. Companies participating in the Global Compact commit themselves to advance, through their operations, nine internationally recognised principles in the fields of human rights, labour standards and the environment. UNEP is one of the core UN agencies involved in the initiative.

undermined the potential for an international regulatory framework" (UNGA, A/56/323, 2001: 14). Yet others felt that multistakeholder voluntary initiatives represented genuine progress in influencing corporate activities and called for a combination of voluntary and regulatory approaches.

Sceptics often criticise international voluntary initiatives for being soft on monitoring. Mindful of the lack of capacity in the UN system and amongst NGOs to effectively monitor the supply chains of hundreds of multinational enterprises[147], UNEP has argued that company involvement in voluntary initiatives should be accompanied by reporting and verification of reporting. UNEP is facilitating another key voluntary initiative, the Global Reporting Initiative (GRI). The GRI is a multistakeholder public policy network aimed at developing globally applicable sustainability reporting guidelines (see GRI, 2000). These guidelines can be used voluntarily by companies to report on the economic, environmental and social aspects of their activities, products and services. They are being used increasingly by corporations world-wide.[148] The GRI Sustainability Reporting Guidelines can in fact be used by any organisation. This links with the role of government reporting (under multilateral environmental agreements and to the CSD) as well as the debate about benchmarking sustainability (finding ideal type indicators for sustainable development). Government reporting involves both national state of the environment reports and reporting on government operations. Examining environmental reporting by the governments of twelve OECD countries, Cash et al. (2001) confirmed that most do not address the environmental impact of their operations, even though the size and scope of government activity—such as procurement and energy use—has wide-ranging environmental effects.

The call for company reporting links with the emergence of "openness" as a business strategy and the trend of states, international institutions and corporations to become less secret and more transparent about their internal practices (Florini, 1998: 50).[149] The Asian financial crisis highlighted the importance of transparency in financial governance, helping to identify risks, improve efficiency and stabilise markets in uncertain times. Accordingly, Langley (2001) referred to the growing importance of transparency as a new implementational norm in global environmental governance. The effectiveness of emissions trading under the Kyoto Protocol will for example depend greatly on market integrity, for which aspects such as measurement, transparency and accountability are decisive. Few IR scholars in the IEG debate have noted this emergence of transparency as "organisational principle". Transparency as "self-disclosure" or "regulation by revelation" links with the growing prominence of voluntary instruments involving eco-design, eco-labelling, environmental accounting and environmental management systems (EMS) with ISO 14000 certification (Langley, 2001: 79—83).

It is important to note that voluntary initiatives and reporting are not activities confined to the private sector. The range of voluntary initiatives can be characterised as follows: public voluntary programmes (authorities inviting individual companies to participate), negotiated agreements (bargain between authority and industry), unilateral commitments (set by industry acting independent of public authority), private agreements (direct bargaining between stakeholders) and international or UN voluntary initiatives (OECD, 1999; Moffet and Bregha, 1999: 15—18; UNGA A/56/323, 2001: Annex II). There are over 300 negotiated agreements in the EU today, particularly in Germany and The Netherlands, covering issues such as waste management and climate change.

UNEP has been involved in the development of various international voluntary initiatives in different industry sectors.[150] Although they are not part of the intergovernmental process, these initiatives use UN and UNEP principles, agreements and recommendations as point of departure (UNGA A/56/323, 2001: 25). An important consideration in these initiatives is the credibility of the UN agency in providing a multistakeholder platform with global reach. The role of the UN agencies is supported by the fact that public institutions are key actors when externalities and harmonisation need to be addressed at the global level. These international voluntary initiatives complement intergovernmental processes and help to fill the gaps in global governance.[151] What role does this leave for state sovereignty?

[147] The UN Conference on Trade and Development (UNCTAD) estimates that there are over 60,000 transnational corporations today, compared to 37,000 in 1990. These corporations have thousands of foreign affiliates, and millions of suppliers and distributors operating in their chains. (UNGA, A/56/323, 2001: 5).

[148] See www.globalreporting.org. As a result of the growth of the initiative, a permanent GRI institution in the form of a UNEP collaborating centre will be established in 2002.

[149] The call for openness may in some cases be countered by a legal risk management approach to foreign direct liability that advises silence as the safest option (Ward, 2001: 5).

[150] These include voluntary initiatives with the banks and insurance industry, tour operators, telecommunications, advertising, automotive manufacturers and the mining industry (see "Division Office—industry outreach" under www.uneptie.org).

[151] Cf Webb (1999: 33—36) on supplementarity.

Conclusion

Gahrton (1991) quoted a remark by ex-UNEP Executive Director Maurice Strong, namely that people have learnt to enlarge their circles of loyalty from the family via the tribe, the village, the town and the city to the nation state, and that they now need to make the next step to the global level. Yet this did not mean an end to national governments. Taking the next step never meant automatically giving up the former circle of loyalty. In the late 1990s the new Executive Director of UNEP called for a vision that does not *per se* imply centralised planning, adding that ecological security can be advanced through reducing the distance between those who decide and those who are supposed to benefit from the resultant decisions (Töpfer, 1999: 20).

Having defined sovereignty as a divisible concept with a sum of governing rights and duties included, we conclude that the allocation of those rights and duties and the appropriate level for the exercise of public authority should be determined by function. This approach makes the locus of "final" authority less controversial and enables us to de-link state, territory and nation. The "state-as-nation" is no longer the "primary theatre of political activity and participation" (MacCormick, 1996: 565). Sympathetic towards network approaches, this approach also implies that policy makers can be more pro-active, rather than remaining "trapped by the territoriality of their power" (Reinecke, 1999:45).

The approach followed here does not foresee a teleological path towards more centralisation. Transparency, stability and the evolutionary nature of the transfer of governing rights are guaranteed by the juridical nature of a process that operates according to a set of legal rules and decision-making procedures. The resultant system of dispersed sovereignty would open the way for more gates of democratic control, establishing more access points for various actors to advance their interests and to monitor decision-making. This should allay the fears of those who view traditional state sovereignty as "better the devil you know", who stress the value of state sovereignty as a segmenting buffer in international relations, and who fear that a functional-contractual approach would weaken restraints on coercive intervention and intensify inter-societal inequalities (Kingsbury, 1998: 623).

In the debate on IEG and alternative organisational structures, this implies that discussion on whether UNEP's GMEF should be a forum for dialogue, advisory body, co-ordinating body, overseer of clustered multilateral environmental agreements, and/or policy making body, needs to be determined by (i) the test of comparative efficiency, (ii) the value added test and (iii) the test of proportionality. Compared to the role of UNEP's Governing Council and the governing bodies of other UN agencies, it will also have to pass (iv) the test of representivity. The case for a strengthened UNEP will lie in its ability to help find solutions that provide a stimulus for legislative measures, changes in administrative structure and practices, changes in economic conduct in and between member states, and public-private partnerships across national borders, whilst assisting in the transfer of policy know-how.

Furthermore, the functional approach suggested here implies that deciding on the clustering of multilateral environmental agreements should be driven by scientific and eco-systemic considerations, with a preference for regionalism[152]. An ecosystemic approach has shown its value in multilateral environmental agreements such as the 1971 Ramsar Wetlands Convention and the 1980 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). In their survey of 132 multilateral environmental agreements, Haas and Sundgren (1993: 402) pointed to countries adopting "a growing body of law that reflects an ecological understanding of environmental systems". They believed that "(a)n incipient move may be afoot to treat ecosystems as the units of international control rather than discrete species or uses of resources" (Haas and Sundgren, 1993: 418).[153] A new character in recent multilateral environmental agreements was reported by Meyer et al. (1997: 637): Firstly, they emphasise regional and global interdependencies. Secondly, they are rooted in a broad and universalistic scientific conception of nature as an ecosystem with which human society must come into balance.

Haas and Sundgren (1993: 405) detected a shift away from large-scale treaties since 1973. Coupled with the fact that the greater number of multilateral environmental agreements has been created since then, this points to a shift towards regionalism. Since the 1980s UNEP has also been moving from drafting global principles to focusing on regional issues as a basis for international law. These trends reflect both the better chances for success and involvement when dealing with a smaller number of players at the (sub)regional level, as well as greater understanding and awareness

[152] Arguing the case for "bioregional society", Sale (1984: 319) believed that too much of today "goes against the gain of regionalism, forcing the nation away from its natural contours toward the artificial unanimity of a monolithic plasticised government".

[153] Cf Litfin (1993: 103) regarding trends in international regime structure and content.

of the interlinkages in regional ecosystems.[154] It reminds of the model of "dirigible pluralism" proposed for the UN by Rochester (1990), of which the defining feature is subsystem autonomy within a central guidance system.

Will the use of voluntary approaches help us to be more preventative, more precautionary? The perceived trend towards self-regulation and voluntarism has led some to refer to the "privatisation of government and governance". Asking for powerful global economic actors to be brought under democratic and collective governance, the South Centre warned against leaving matters to market forces. This think tank of the G77 and China concluded: "The shrinking of governmental and public roles, the downplay of regulatory approaches under the new dogma and under the pressure of powerful economic interests" are "hardly compatible with the spirit of Stockholm" (South Centre, 2001: 7). It argues that the non-interventionist approach cannot be a substitute for the global and holistic approaches required.

Does a more holistic approach imply one that is more regulatory and institutionalist? If governments were to pursue cause-and-effect relations in greater detail, where will this lead them? A more holistic or ecosystem approach requires more long-term thinking. If the market causes companies to plan short term only, the role of public authorities is to create an appropriate framework within which the market can operate sustainably. This includes introducing economic instruments such as taxes, tradable permits and refund systems. Clearly, the reality more often than not involves a blend of public and private ordering. Also, it can be argued that the trend toward affording discretion to public and private entities to individualise their obligations through economic instruments and voluntary initiatives affirms the principle of subsidiarity. The enactment of rights and duties starts in your own backyard.

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Part IV

When Global is Local: Global Versus Local Instrument Choice

When Global is Local: Negotiating Safe Use of Biotechnology

*by Aarti Gupta**

At the turn of the century, the changing nature of interactions between states and markets are endlessly debated under the catch-all concept of globalisation (Appadurai 1996, Rodrik 1997, Ancarani 1995). Notwithstanding disputes about the nature of this phenomenon, there is an urgent need for governance, especially transnational governance, to anticipate and address potentially transformative technological, environmental and social changes associated with globalisation.

Governance, from the Greek *kubernan*, suggests navigation or steering. Yet navigating change in a manner that is legitimate across contexts remains the pressing governance challenge, requiring as it does the mediation of local or context-specific perspectives on the nature of a governance problem and appropriate bases for collective action. This challenge is now exacerbated by the growing need for anticipatory governance or governance under conditions of extreme uncertainty and normative conflict over the existence, nature and hence framing of a problem.

This chapter explores whether and how shared problem framings are emerging in a critical area of anticipatory global governance—*biosafety* or the safe use of the techniques of modern biotechnology in sectors such as agriculture and human health[155]. In analysing prospects for a shared framing of biosafety, I focus here on the multilateral negotiating arena of the Cartagena Protocol on Biosafety, as a site wherein efforts to develop such shared framings or to "globalise" biosafety can be observed.

The Cartagena Protocol on Biosafety, concluded in January 2000 under the auspices of the Convention on Biological Diversity, is the newest global treaty regime governing the transboundary transfer and safe use of genetically modified organisms in agriculture (CP 2000). Use of biotechnology in agriculture has increased substantially over the last three decades, particularly in certain agricultural exporting countries of the Organisation for Economic Co-operation and Development (OECD) (James 1998, 2000, BIO 2000). The resultant genetically modified or "transgenic" crops are being transferred across the globe, giving rise to concerns over "biosafety" or the perceived need to govern the safe transfer and use of such modified entities.

Safety, however, can be very differently understood, as starkly evident from contentious transnational debates over existence and nature of potential risks (ecological, health or socio-economic) posed by use of modern biotechnology in agriculture (May 1999). Ecological concerns include potential adverse impacts on biodiversity from novel gene flow or insect resistance to "pest-resistant" transgenic crops (Wolfenbarger and Phifer 2000, Mellon and Rissler 1998). Human health concerns relate to the potential for increased allergenicity or toxicity from consuming transgenic foods (Nottingham 1998, McHughen 2000). In addition, a variety of socio-economic and ethical concerns centre around the need to democratically manage the transformative potential of this new technology, especially for use in a key sector such as agriculture (Egziabher 1999, Nuffield Council on Bioethics 1999, Shiva 1998).

This chapter analyses how, if at all, local perspectives on biosafety are mediated in the Cartagena Protocol's search for shared global understandings (i.e. for meanings of biosafety that might be trans-locally legitimate). Local knowledge is understood here as common understandings held by a collectivity within an identifiable context (Shapin 1995). By this definition, most knowledge is "local" and if so, the interesting question becomes whether and how particular local knowledges acquire ascendancy and become globalised.

In particular, given this understanding of local knowledge, I view multilateral negotiating arenas (as well as their scientific and technical expert groups) as sites of local knowledge production, if certain context-specific understandings are identifiable. At minimum, they are sites for contestation over whose local knowledge will acquire ascendancy and become globalised. If so, negotiations over biosafety in the multilateral context of the Cartagena Protocol offer an excellent site wherein to analyse whether and how particular local knowledges about biosafety come to achieve trans-local status.

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155 Use of biotechnology involves, most generally, the isolation and transfer of genes from one source into another, using molecular techniques. The distinction between biotechnology and modern biotechnology is said to lie primarily in the latter's use of recombinant deoxyribonucleic acid (rDNA) techniques. Deoxyribonucleic acid is the carrier of genetic information in all organisms except viruses (McHughen 2000).

More than ever, a key tool relied upon to globalise normatively contested concepts is science. Reliance on science is becoming institutionalised as a basis for cross-national risk decisions in global governance fora, particularly in the influential world trade regime (SPS Agreement 1994, WTO 1998). Increasingly heard is a call for "sound" science, understood variously as objective, technically precise, value-neutral and removed from normative influences.[156] A mandatory "scientifically sound" quantitative risk assessment is also one key component of biosafety governance within the Cartagena Protocol regime (CP 2000, Art. 15).

As analyses of domestic and international governance continue to highlight, however, technical debates are not isolated from politics but instead both shape and are shaped by political conflicts (Jasanoff 1991 and 1998b, Sterling 1999, Sarewitz 2000). If so, this chapter subjects to critical scrutiny the call for "scientifically sound" decisions in the Cartagena regime, and analyses the role for science-based framings of biosafety in mediating normative conflict. I focus, in particular, on efforts to define key biosafety-related terminology within the Cartagena Protocol's Scientific and Technical Expert Group. The aim is to understand how context-specific local understandings of biosafety get mediated in the search for globally shared definitions.

Through such a focus, this chapter subjects to critical scrutiny continued attempts within such global governance fora to set science apart from politics, and to distinguish globally valid scientific knowledge from place-based and context-specific local knowledge. I do so through illustrating the context-specific and hence *local* nature of the "scientific" understandings of biosafety reached within the Cartagena Protocol's Scientific and Technical Group. Through viewing scientific understandings reached within this global forum as local, this analysis thus also turns on its head persisting associations of local knowledge with the non-global and the non-scientific.

It reveals, in addition, that shared scientific understandings are most likely to obtain through deliberate ambiguity and leeway for local re-interpretation in the meanings of biosafety, rather than through technical precision or value-neutrality. The chapter concludes by arguing that, instead of striving for means to separate science from politics (and globally valid from locally specific knowledge), the governance challenge remains the opposite–it requires institutional mechanisms which can mediate between such categories in a cross-nationally credible manner.

Section 2 explores in more detail the theoretical implications of boundary-drawing between science and politics for global governance of controversial and anticipatory issues-areas such as biosafety. Section 3 then analyses disputes over definitions of key terms relevant to biosafety within the Cartagena Protocol's Scientific and Technical Expert Group, and the role for boundary-drawing between science and politics in resolution of these disputes. Section 4 provides a conclusion.

Boundary making in governance: Separating science from politics

In analyses of global governance, the portrayal of science as the only trans-locally valid language through which to mediate normative conflicts is the subject of increasing critical scrutiny (Jasanoff 1996, 1998b, Carter 1997, Herrick and Sarewitz 2000, Gupta 2001). In envisioning such a role for science, policy makers and scientists alike continue to associate scientific knowledge with attributes seen as the antithesis of local knowledge, including technical precision and value-neutrality. A claim to value-neutrality necessarily requires, however, that science be set apart from normative conflicts, i.e. it requires *boundary making* between science and politics.

Such boundary-making has long been recognised and critiqued as a political legitimisation strategy in domestic environmental decision-making (Jasanoff 1987, 1990; Gieryn 1995). Such writings take as their starting premise that science is not objective in the sense of being value-neutral, since value-judgements permeate all stages of risk identification and containment. Instead, they analyse where and why (i.e. for what political, cultural or institutional purposes) the boundaries between the technical and political are drawn in particular instances of science-policy interactions.

As Gieryn suggests, "social construction of the science/policy boundary is a crucial strategy through which distinctive interests of diverse players are advanced or thwarted… boundary-work occurs as people contend for, legitimate, or challenge the cognitive authority of science" (Gieryn 1995: 436, 405). Separating science from politics also serves the equally important function of maintaining the legitimacy of contested political decisions (Jasanoff 1985, 1991b),

[156] For a comprehensive analysis and critique of the notion of sound science as value-neutral and objective, see, eg. Sterling (1999:19-20). For characterization of the concept of "sound science" as an ideological construct, see Levidow and Carr 2000a, 2000b. For analysis of the institutionalization of "sound" science in the global trade regime, see Carter 1997, Wirth 1994.

especially in areas of governance where scientific uncertainty co-exists with extreme political controversy.

Early critiques of boundary making between science and politics in global governance come to similar conclusions. In questioning the model of an objective science feeding into policy, Karen Litfin, writing about the role for scientists in governing the ozone depletion challenge, suggests that "inasmuch as scientific discourse permeates political debates, as often as not it serves to articulate or rationalise existing interests and conflicts" (Litfin 1994, 197). This is a direct critique of a dominant strand of writing within international relations literature, which argues that consensual technical input provided by scientific "epistemic communities" can assist in reaching politically difficult compromises, as a result of its authoritativeness and value-neutrality (Haas 1992).

In contrast to such views, others also emphasise that an important implication of characterising certain issues as scientific rather than political is that it renders those without the requisite technical expertise voiceless in the framing of the issue or its resolution (Dietz, Stern and Rycroft 1989, Jasanoff 1998b). Thus, attempts to separate the domain of science from politics in decision-making, and designate certain issues as technical rather than political, has the negative consequence of excluding "lay" perspectives from the process of participatory democratic decision-making about technological change (Press 1994, Rose-Ackerman 1995, Biermann 2001).

In a transnational context, such a process may result in lesser experienced developing countries being unable to articulate their concerns in "technical" debates in global governance fora or be forced to voice broad concerns in the language of technically assessable harm (Gupta 2000c, 2001a,b). Notwithstanding this, national and global governance regimes continue to call for "sound" science (SPS 1994, WTO 1998). As United States President George W. Bush has recently stated in context of the climate change, "we're going to make decisions based on sound science, not some environmental fad or what may sound good" (Bush, quoted in China Post 2001).

It remains a paradox for global governance that such calls for "sound science" are heard most often under conditions of the most severe institutional uncertainty and lack of trust (see also Wynne 1987, Sarewitz 1996). As recent analyses of scientific input into governance emphasise, it is only in areas where normative conflicts have been resolved that "consensual" technical understandings are more likely to follow (Sarewitz 2000). This turns on its head a characterisation of epistemic communities as providing consensual science *as a way to* mediate political conflict. Instead, it suggests that epistemic communities of scientists are more likely to be outcomes of a process of political conflict resolution rather than its cause (Jasanoff 1998b, 86).

In analyses of how mediation between science and politics occurs in normatively contested areas, Shackley and Wynne suggest that "boundary-ordering devices" which serve as "contextual discursive attempts to reconcile authority with uncertainty in science" are increasingly necessary (Shackley and Wynne 1996: 275). Particular concepts, such as "uncertainty" in the climate change regime, for example, can serve as discursive boundary-ordering devices. Their key distinguishing feature is that they allow diverse and flexible interpretations of their meaning, through deliberate ambiguity or lack of definitional precision, and hence maintain the cognitive authority of science, even as they allow policy dialogue to continue. In doing so, they permit both "co-operation *and* heterogeneity" to co-exist (Shackley and Wynne 1996: 293).

The implications of relying on boundary-ordering devices in global governance of diverse issue-areas remain important to examine. The challenge is how to juxtapose reliance on such boundary-ordering devices with the contradictory imperative in global governance, that of harmonising or reducing trans-local differences, particularly through quantitative standardisation. Standardisation entails, as Theodore Porter puts it, "separating knowledge from its local context" (Porter 1995: 22). Yet, especially in the realm of normative conflicts, is a standardised understanding of "biosafety" attainable? What kind of standardisation or harmonisation can mediate local difference in a manner that is trans-locally legitimate?[157] Such questions motivate the analysis below of the search for shared framings of biosafety in the multilateral context of the Cartagena Protocol.

Globalising biosafety through science?

Following intense negotiations[158], a temporary understanding of biosafety is captured in the stated objectives of Cartagena Protocol on Biosafety, which are:

> To contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern bio-

[157] For a typology of harmonization understood as reducing national differences, see Esty and Geradin (1997). In contrast, for an understanding of harmonization as requiring "reciprocal commentary" and "mutual education" and as a process of reasoning together, see Jasanoff (1998).

[158] For negotiating history of the Cartagena Protocol, see Gupta 1999, 2000b and 2001a.

> technology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health and specifically focusing on transboundary movements" (CP 2000, Art. 1).

As seen from the above, the Cartagena Protocol associates biosafety with concern over potential "adverse effects on the conservation and sustainable use of biological diversity, taking also into account the risks to human health" that may result from transboundary movement, handling and use of "living modified organisms resulting from modern biotechnology"[159]. To fulfil this objective, the Protocol also mandates that a "scientifically sound" quantitative risk assessment be relied upon to assess such potential adverse impacts (CP 2000, Art. 15). Furthermore, adverse impacts from LMOs can result from their "contained use" or "intentional introduction" into a "likely potential receiving environment" (CP 2000, Art. 6,7).

Understandings of these terms are critical to how the newly emerging concept of biosafety gets framed in this global governance context. Furthermore, the terms are explicitly socio-technical in nature, requiring technical and political mediation in the search for trans-locally valid understandings. Yet, in the Cartagena Protocol negotiations, the task of defining these critical concepts was given over to a Scientific and Technical Expert Group (called Contact Group-1 during the negotiations)[160].

This was a cross-national and multi-disciplinary group of scientists mandated to provide "technical" input into the "political" negotiations. In establishing this group, Protocol negotiators emphasised repeatedly that it was meant to provide scientific input to the political decision-making arm, and was not itself engaged in political negotiations. Member scientists (who were participating in the group as representatives of their countries, rather than in their individual capacity as experts) saw their task as "not to negotiate" but to come to mutual agreement about complex technical issues in their capacity as scientists[161]. The deliberations of this group offer, then, a useful case through which to analyse the implications of boundary-drawing between science and politics for framing biosafety, and for mediating normative conflict in the search for shared understandings.

Member scientists in this group spoke on behalf of three main negotiating alliances. These included (a) the Miami Group, a group of agricultural exporting countries; (b) the European Union, often supported by Norway, Switzerland and other non-EU OECD members; and (c) developing countries. The Miami Group included six agricultural exporting countries (Argentina, Australia, Canada, Chile, United States and Uruguay) who are at the forefront of testing and producing LMOs for commercial use in agriculture[162]. This group was supported in its call for a "workable protocol" with a narrow scope and "sound" scientific decision-making by the Global Industry Coalition, a coalition of biotechnology industry groups (GIC 1999). As the GIC has repeatedly emphasised, "decisions under the Protocol…must be based on sound and objective science. To do otherwise, will severely undercut the effectiveness and integrity of the Protocol…"[163].

In contrast, the European Union, from the perspective of a potential LMO-importer, was keen to ensure national discretion and flexibility in approving LMO transfers, especially by emphasising the need for precautionary decisions in the face of scientific uncertainties.[164] Developing country scientists, supported most often by green group and Nordic countries, pushed for the broadest understandings of biosafety (to also include socio-economic considerations), so as to ensure greatest discretion in defining and addressing biosafety within their national contexts and in regulating potential transfers of LMOs to their countries (Gupta 2001b, forthcoming).

The key biosafety-related concepts requiring definition by this Scientific and Technical Expert group included (a) living modified organism; (b) modern biotechnology; (c) deliberate release; (d) contained use; and (e) the likely potential receiving environment for LMO releases. Below, I explore the nature of disputes over each and the resolution reached, with its implications for shared framings of biosafety and global governance in this contested area. The analysis

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159 See Gupta 1999, 2000b for detailed analyses of disputes over whether biosafety was primarily a concern with adverse impacts on biodiversity, or equally on human health.

160 Members of government delegations who were scientists and lawyers were organized into what was termed Contact Group 1 (the scientific group) and Contact Group 2 (the legal group) to provide scientific and legal advice respectively to the "political" negotiations (see, for example, BSWG 1999b and ExCOP 2000 for reports on how negotiations were organized).

161 Based on participant observation of Contact Group 1 deliberations during negotiation of the Protocol. Montreal, February 1998; August 1998. Cartagena February 1999.

162 In 2000, a total global area of 44.2 million hectares (or 109.2 million acres) was devoted to transgenic crops. Of this, the United States contributed 68%, Argentina 23%, Canada 7%, China 1%, and Australia and South Africa over 100,000 hectares (James 1998, 2000).

163 As stated by Dr. Helma Hermans, Executive Secretary, Green Industry Biotechnology Platform, in email communication to Observers to the CBD Meeting (Feb. 10, 1999, 12:51 pm). For similar views, see position papers of the Global Industry Coalition, example, GIC 1999a,b.

164 For analyses of the disputed concept of the precautionary principle, see, for example, Gullett 1997, Dratwa 2001, Applegate 2001. For an analysis of the role of the precautionary principle in the Cartagena Protocol, see Gupta 2001b.

is based on first-hand participant observation of debates within this scientific and technical expert group, primary documents and confidential semi-structured interviews with its members and other stakeholders during Cartagena Protocol negotiations from 1998-2000.

DEFINING A LIVING MODIFIED ORGANISM: NOVELTY AS A BOUNDARY-ORDERING DEVICE[165]

In attempts to develop a shared definition of the concept most central to this regulatory regime—a living modified organism—the scientists in the expert group agreed that such entities were novel, i.e. distinct in some manner from a non-LMO. However, the key concept of "novelty" was differently understood by participating scientists. Conflict centred around whether a novel entity was one that was "unlikely" or "unknown" to occur in nature (CG 1 1998a, b). While a seemingly subtle distinction, selecting one or the other interpretation would narrow or broaden the understanding of novelty, and hence the definition of what constituted an LMO. This was because modified entities that were unknown, yet likely to occur in nature, were a smaller subset of those that were simply unknown to occur.

In supporting the narrower "unlikely to occur" definition of novelty, Miami Group scientists argued that if genetic modifications resulted in a product that was likely to occur in nature, it should not be subject to regulation, since it would not pose risks distinct from already existing non-genetically altered organisms. Scientists from developing countries and Nordic scientists contested such a claim in supporting the "unknown to occur" understanding of novelty. Their scientific rationale was that it was impossible to unequivocally state what was likely or unlikely to occur in nature, and that the only verifiable and non-hypothetical scientific claim was whether or not an entity was known or unknown to occur in nature.

This understanding of novelty captured a broader set of genetically modified entities within the definition, since most genetic modifications are likely to result in organisms currently unknown to occur in nature. If selected, this would result, in effect, in a process-based definition of an LMO, since use of modern biotechnology would in and of itself result in an organism currently unknown to occur in nature.

This divergence in scientists' opinion over the central concept of novelty was not resolved through reaching scientific consensus or through greater technical precision. Instead, agreement could only be reached within the Scientific and Technical Expert group by deleting both contested interpretations of novelty and leaving the concept unexplained.

Thus, while an earlier, draft version of the definition of an LMO stated that:

> LMO means any living organism that contains genetic material which has been modified by modern biotechnology and of which the resulting genotype is [unlikely] [not known] to occur in nature and can confer traits novel to the organism (CGI, 1998a, *with brackets denoting continuing disagreement*).

the final definition read that:

> LMO means any living organism containing a novel combination of genetic material obtained through the use of modern biotechnology (CGI 1998b; CP 2000, Art. 3.g).

This "agreement" that LMOs are entities that "contain a novel combination of genetic material" hides within it different and unreconciled interpretations of the meaning of the critically important concept of novelty. This allowed dialogue to continue, which was symbolically and substantively important because an agreed definition of an LMO was necessary for the "political" component of the negotiations to continue their deliberations. However, instead of containing a technically standardised understanding of novelty, the definition of a "living modified organism" agreed upon during the Cartagena Protocol negotiations by its Scientific and Technical Expert Group will necessarily be variably interpreted.

The concept of novelty as understood here can be seen as an example of what Shackley and Wynne (1996) have termed "boundary ordering devices" as discussed in the previous section. In their ambiguity and openness to flexible interpretation, such discursive devices both maintain the cognitive authority of science (which may be challenged in the search for greater technical precision in such areas of normative conflict) while at the same time performing the critical political function of accommodating diverse and context-specific interpretations of these concepts.

DEFINING MODERN BIOTECHNOLOGY: NEGOTIATED SCIENCE

Another essential term requiring a "technical" definition was "modern biotechnology" (CP 2000, Art. 3). A key point of conflict here was whether techniques of cell fusion, relied upon in some countries to pro-

[165] Although the Cartagena Protocol on Biosafety regulates products of modern biotechnology or what are commonly called "genetically modified organisms", the Protocol refers instead to "living modified organisms". This change in terminology was at the insistence of the United States, which argued early on that genetic engineering did not pose unique risks and hence did not need to be singled out for regulatory attention. When this emerged as a minority position, they pushed for the change in terminology in an effort to deflect attention away from "genetic" modification as subject to regulation (Gupta 1999, Rajan 1997).

duce genetically modified pharmaceuticals and LMOs in contained conditions, were to be considered part of modern biotechnology or whether they were traditional techniques. The importance of this turned on the fact that if cell fusion were included in the definition of modern biotechnology, a larger category of genetically modified products transferred world-wide could be subject to the Cartagena Protocol's requirements, an outcome desired by some developing countries but objected to by LMO exporting countries of the Miami Group (Meyer 1999, Anonymous 1999, Japan 1999b).

Countries of the Miami Group, supported by Japan and Brazil, argued that cell fusion had been used for decades and was a traditional rather than a modern form of genetic manipulation (see, for example, Japan 1999b). They also pointed to lack of scientific evidence that use of such techniques threatened biological diversity or human health. Others, especially developing countries, pointed out that "traditional" and "modern" forms of genetic manipulation meant very distinct things in different contexts. In arguing for its inclusion within the definition, they provided scientific data to show that cell fusion could be used to cross species barriers, a key characteristic of modern biotechnology in their view (Meyer 1999, Anonymous 1999).

To move beyond the impasse, the Chair of the Expert Group suggested a compromise, to state that "fusion of cells beyond the taxonomic family" should be considered part of modern biotechnology. The Chair described his suggestion as a "qualified inclusion of cell fusion, as a compromise between including it and not including it" (CG1 observations 1998). While the substantive elements of this new formulation provoked much debate, the point of interest here is the response to the Chair's suggestion that this was a "compromise". The scientist-delegate from the United States noted that "we take issue with the suggestion that we should try to find a compromise in such a technical discussion, let's go with what the science tells us." Similarly, the Brazilian delegate emphasised that "we are having a technical discussion, let's hear the scientific arguments." This prompted a statement from the Chair that although they were a technical group "at some point we are negotiating and then we may no longer be on technical grounds" (CG-1 observations 1998).

Equally illuminating is the final outcome. The Miami Group scientists earlier calling for reliance on science signalled their acceptance of the compromise only on condition that a qualifying footnote be added. This footnote stated that their "acceptance of the inclusion of cell fusion" within the definition of modern biotechnology was "dependent upon resolution of the question of inclusion of contained uses and/or pharmaceuticals. If contained use and pharmaceuticals are included within the Protocol, the cell fusion issue [i.e. its inclusion in the definition of modern biotechnology] will have to be revisited" (CG-1 1998d).

Thus, acceptance of the Chair's compromise was contingent less on its scientific plausibility and more on the outcome of the political debate over whether the Cartagena Protocol would include LMO-based pharmaceuticals and contained uses of LMOs within its scope. The negotiating parties recognised that if the Protocol excluded these categories of LMOs, this would automatically exclude most uses of cell fusion, making its inclusion in the definition of modern biotechnology somewhat moot. This example reveals most clearly the negotiated nature of the agreements reached within the Scientific and Technical Expert Group. In the context of this article, it illustrates the locally situated nature of scientists' agreements about key terms relevant to biosafety reached within this global forum.

DEFINING DELIBERATE RELEASE: CREATIVE LANGUAGE SUBSTITUTION

Another task for the scientific and technical group was agreeing on what constituted the "deliberate release" of LMOs into the environment. One revealing component of this debate centred around the suggestion by Miami Group scientists to substitute the term 'deliberate release' with 'intentional introduction'. While these terms appear identical in meaning, the Miami Group suggestion was designed to avoid importing into the Cartagena Protocol the institutional history and underlying norms and practices associated with the term 'deliberate release' elsewhere, in particular from the European Union's regional directives on deliberate release of genetically modified organisms (interviews, EU 1990, see also EU 2001).

As with earlier instances of creative language substitution (such as "living modified organism" for "genetically modified organism" or "advance informed agreement" for "prior informed consent"[166]) this

[166] The Cartagena Protocol calls for the "advance informed agreement" of an importing country prior to transboundary transfers of LMOs. This concept has its genesis in the better known "prior informed consent" relied upon in to regulate global trade in hazardous and restricted substances, such as waste and banned chemicals and pesticides (Mehri 1988, Krueger 1998, Ross 1999). This change in terminology was again at the insistence of the United States, who argued that products of genetic engineering were not intrinsically hazardous and hence should not require "prior informed consent" since this term was associated in the global realm with hazard-

substitution was explicitly intended to disassociate understanding of this term from its meanings in other contexts. The example highlights yet again that "agreeing on the science" does not occur in a vacuum devoid of institutional and social context. Instead, as with terminology such as modern biotechnology or living modified organism, concepts such as deliberate release are embedded in particular institutional histories and norms of practice.

DEFINING CONTAINED USE OF AN LMO: DEFERRING TO CONTEXT-BASED DIFFERENCES

Yet another crucial task for the Scientific and Technical Expert Group was to develop a shared understanding of what constituted "contained use" of LMOs. The concept of contained use could be narrowly or broadly defined. For example, containment could mean physically enclosed spaces such as research laboratories, or it could be more broadly understood to include field test sites (if these were characterised as being under controlled experimental conditions). In addition, containment could also be through biological means. Thus, genetic modifications resulting in sterile seed (the much contested future possibility of "terminator technology)[167] could be characterised as a form of biological containment of the novel genetic material in an LMO[168].

Disputes over how to define containment within the Scientific and Technical Group were closely tied to political conflicts over the scope of the Protocol's advance informed agreement obligations. If LMOs transferred for contained use were excluded from the Protocol's advance informed agreement obligation, which appeared likely, *and* if containment was broadly defined to include field tests and LMOs with terminator genes, this would exclude the most widely undertaken activities (field tests) or the most controversial (terminator genes) from the advance informed agreement obligation.

This political reality was reflected in the Scientific and Technical Group's efforts to define contained use. Given growing clarity that contained use was to be excluded from the Protocol's advance informed agreement, developing country scientists within the Scientific and Technical Group argued for a narrow definition of containment, to be restricted to LMOs used in physically contained structures. Others, especially exporter countries of the Miami Group, supported by industry, argued for a definition that also included biological and other forms of containment.

Ultimately, the only way to reach agreement in the face of these differences was to define the term "contained use" in a manner that allowed for multiple interpretations to persist. An earlier more explicit but contested definition stated that:

> contained use means any operation involving organisms which are controlled by physical barriers or a combination of physical and/or chemical and/or biological barriers which limit their contact with, or their impacts on, the potentially receiving environment, which includes humans (BSWG 1999b:4).

This definition does not restrict containment to physical structures and explicitly includes biological containment. Thus, it potentially includes both field trials and LMOs with terminator genes within the definition. Since this was unacceptable to many developing countries, a second definition stated more generally that:

> contained use means any operation, undertaken within a facility, installation or other physical structure, which involves living modified organisms that are controlled by specific measures which effectively limit their contact with, and their impact on, the external environment (BSWG 1999: 5, Article 3.b).

In the second definition, diverse interpretations of the text are possible regarding whether field trials and LMOs with terminator genes are included within the definition. While containment, at first glance, seems linked to a physical structure, the reference to "any operation" undertaken within such a structure can be interpreted to mean that only the process of ensuring containment is undertaken within a facility or physical structure. However, the containment itself can be related to "specific measures" which is a more general formulation of the more specific earlier reference to "physical and/or chemical and/or biological barriers". This leaves open whether biological containment or field tests (where containment would also depend upon social measures such as monitoring and sampling) are excluded or included.

Given the controversial implications of this definition for the scope of the Protocol and for developing country concerns over field tests and terminator genes, multilateral negotiators agreed in a last-minute compromise that, in the event of conflict over what constitutes contained use, an importing country's

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ous substances (Gupta 1999).

167 So-called "terminator technologies" (the term used by its detractors) or "genetic use restriction technologies" (the term used by its advocates) include genetic modifications that can product sterile seed. This is a form of technological patent protection, since it forces farmers to buy seed anew each year. For controversy over "terminator technology" in a developing country agricultural context, see Hindustan Times 1999, Indian Express 1998, Science for People 1999.

168 The claim that genetic modifications which produce sterile seed can address the problem of novel gene flow is an interesting example of a regulatory trend critiqued by Herbert Gottweis in a study of genetic engineering regulation in Europe, whereby "hazards (are sought to be) controlled by the (very) technologies that produce their possibility" (Gottweis 1998: 104).

understanding of containment prevails over that of the Cartagena Protocol's (CP 2000, Art. 6.2). This final resolution is a telling instance of the impossibility of standardising this context-dependent concept in this global forum through reliance on technically precise criteria. Instead, the Protocol's resolution of this issue recognises the need for local interpretative flexibility in biosafety related terminology and leaves room for it.

DEFINING A RECEIVING ENVIRONMENT FOR LMO RELEASES

The Scientific and Technical Expert Group also sought to agree on what constituted the "receiving environment" for release of LMOs. Scientists from Nordic states and developing countries argued for a broad understanding of this term, noted that a receiving environment should include not only a particular field into which an LMO was sown, but also its surrounding areas, since these could inadvertently become receiving environments (due to spread of pollen from transgenic crops, for example). The term "potential" was added to "receiving environment" to address this concern. However, this formulation was seen as too broad by the Miami Group. As one scientist noted, the "whole planet could be a potential receiving environment—clearly we don't want to worry in Australia about LMOs planted in Asia." (CG-1 observations 1999). These scientists proposed adding the qualifier "likely" to "potential receiving environment" as a way to address their concern. The result is an awkward and necessarily vague formulation—risk assessments under the Protocol must now assess impacts of LMO releases into a "likely potential receiving environment" (CP 2000, Art. 1, Annex II).

Legal language is often vague and the language here leaves interpretation to the discretion of local risk assessors. Nor does it specify institutional means through which the boundaries of such interpretative freedom are to be defined. Inevitably, then, such considerations will be delineated on a case-by-case basis rather than through global standards established under the Cartagena Protocol. The Protocol's reliance on ambiguity, interpretative flexibility and deference to context-based interpretations of key concepts is inevitable and essential, given vastly differing political, ecological and social settings for LMO releases.

By revealing the impossibility of quantitative standardisation in this global arena, this example, and the deliberations of the Scientific and Technical Group more generally, fly in the face of a call for sound scientific decision-making, if conceptualised as the antithesis of negotiation. Instead, the Scientific and Technical Expert Group's deliberations reveal an image of what can be called a "multi-culturally sound" science, as one where ambiguity, technical imprecision and even outright political compromises are key to reaching agreement. As shown, this outcome obtains because disputes over scientific terminology in this multilateral negotiating arena are often surrogates for diverse and context-dependent understandings of biosafety.

As Wynne (1987) points out in an analysis of European hazardous waste regulation, another attempt at standardising diverse notions of risk:

> the viability of the regulatory process may actually depend upon the very opposite of intensification of science; it may require that some imprecision and ambiguity of formal regulatory standards and definitions be maintained, as an adaptive arena in which the contending parties can interact, negotiate, and settle and renegotiate the practical meanings as they go along (1987:9).

Such imprecision and ambiguity is also clearly evident in the deliberations of the Cartagena Protocol's Scientific and Technical Expert Group. This highlights again that, although scientific input remains critical to governance of technological and environmental change, it cannot serve as a neutral mediator of normative conflict.

Re-evaluating science-based framings as universal

The analysis in this chapter shows that the understandings of key terms relevant to biosafety within the Cartagena Protocol's Scientific and Technical Expert Group are locally contingent, i.e. a function of the particular dynamics of this negotiating forum. If so, they will require re-localisation to be relevant to alternative contexts. However, the negotiated and deliberately ambiguous compromises arrived at within the Protocol's Scientific and Technical Group do indeed leave substantial scope for such relocalisation at each contested node.

Herein lies the most important contribution of this global governance forum. The analysis suggests that it is precisely through a process of negotiation and mediation of diverse knowledges that shared understandings, that are trans-locally relevant, are likely to emerge and become institutionalised. If so, global governance arenas such as the Cartagena Protocol on Biosafety are primarily sites for the on-going search for shared norms (Gupta 2001a) instead of vehicles which transfer unproblematic and globally shared problem framings to diverse national and local contexts, requiring only national and local implementa-

tion in order to be effective[169].

Global norms to bridge local differences?

Ultimately, the challenge for global governance in heavily contested areas such as biosafety remains how to forge globally valid norms of governance which can take account of diversity, not just scientific, but also economic, moral and cultural. If predictability in inter-state interactions is a driving motivation and legitimate goal of global governance, then the route to such predictability cannot lie in a denial of difference. Nor can it, as shown here, lie in the effort to standardise through quantitatively precise and objective science.

This is so not only because the science is contested and its interpretation is context dependent. It is because "good" science for policy-making requires good politics. Most importantly, this requires institutional mechanisms that can facilitate the legitimate exercise of national discretion (based on legitimate context-specific differences). A common, i.e. global understanding of what constitutes legitimate difference remains, then, a central challenge for global governance.

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[169] For a critique of such a view of compliance with global regimes, see Jasanoff 1998b.

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Global Versus National Instrument Choice

by David M. Driesen[*]

The topic of instrument choice, the selection of the regulatory means of environmental protection, has generated an enormous literature. Most of this literature debates the relative merits of taxation, emissions trading, traditional regulation, and other measures as techniques for protecting the environment. Precious little attention has focused upon the question of who should choose from the menu of possible instruments (cf. Driesen 2000).

Until recently, many international agreements, especially in the area of pollution control, had left the choice of instruments to national governments. Under the Kyoto Protocol and the Framework Convention on Climate Change, however, instrument selection has become the subject of extensive international negotiations. This article argues that shifting decisions about instrument selection to the international level carries with it under-appreciated problems. Indeed, these problems raise the question of whether a desire for workable and effective agreements requires the diffusion of regulatory approaches across national boundaries, rather than international selection of instruments.

This article begins by providing examples of the model that relies upon international selection of goals, but national choice of implementation mechanisms. The second part of the article describes how the climate change regime has departed from this model, making the choice of allowance trading the subject of much international debate and controversy. The article's final part develops the implications of switching instrument choice functions from the national to the international level. In particular, it argues that international selection of allowance trading leads to international design decisions. This combination of international selection of instruments and international design makes it difficult to attract effective participation in international agreements, even though it may contribute to greater theoretical efficiency in the use of compliance resources. This article concludes that leaving instrument choice to national decision-making and the process of diffusion of good ideas may make it easier to select instruments suited to national implementation capabilities.

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The model of international goal determination with national instrument selection

Many international environmental agreements establish goals for national pollution reduction programmes. Because the international community lacks the capacity to regulate individual polluters, national governments must regulate private parties in order to achieve the internationally agreed upon goals. International environmental law follows a three-phase approach. In the first phase, representatives of nations agree upon goals. In the second phase, national governments adopt regulatory programmes to meet the international goals. In the third phase, private parties reduce pollution to comply with the national regulations.[170] No environmental improvement occurs until the third phase occurs. Governments choose the regulatory instruments they find most appropriate to their national circumstances, as part of their effort to regulate their polluters to achieve international goals in phase two.

Often phase one begins with international agreement upon a set of principles, sometimes quite vague principles, which establish a framework for future negotiations (Sand 1999, 65). If all goes well, negotiations eventually produce quantitative obligations for national pollution reduction programmes.

The Convention on Long-Range Transboundary Air Pollution, for example, follows this model. When first negotiated in 1979, it contained a set of principles, but no fixed emission targets. Subsequent protocols, adopted much later, established national limits on sulphur dioxide, nitrogen oxides, and volatile organic compound emissions.

These protocols, however, leave instrument selection to national governments. Article 2, section 4 of the Oslo Protocol, for example, explicitly states that "Parties"—meaning national governments—"shall make use of the most effective measures for the reduction of sulphur emissions appropriate in their circumstances." That section then lists measures that national programmes might include, namely, meas-

[170] While I have explained this in terms of a pollution reduction programme, the same process generally applies to regimes conserving natural resources as well. International agreements set goals, national governments develop regulatory programme, and then private parties must alter their conduct in order to achieve conservation goals.

ures to increase energy efficiency, increase use of renewable energy, reduce the sulphur content of fuels, and to apply best available control technology. The Protocol explicitly leaves the choice of measures and instruments, however, to national governments. This combination of internationally agreed upon specific goals with national instrument choice succeeded in reducing sulphur emissions in Europe (Sand 1999, 200).

The regime addressing stratospheric ozone depletion followed the same model, international selection of goals (first qualitative and then quantitative) coupled with national choice of implementation strategies. The Vienna Convention for the Protection of the Ozone Layer obligated state parties to "take appropriate measures" to protect "human health and the environment" from ozone depletion, but did not specify quantitative goals. Subsequent Protocols, beginning with the Montreal Protocol on Substances that Deplete the Ozone Layer, translated these general goals into increasingly stringent limits on the consumption of various specifically listed ozone depleting substances (Barratt-Brown 1991, 532-534). Countries, however, may use any method they please to meet the quantitative targets (Barratt-Brown 1991, 532). The United States, for example, has used command and control regulation, taxation (*Environmental Taxes Act*), tradable allowances, and a production ban to address the global problem of stratospheric ozone depletion.

An international agreement reached in phase one of the legal process to require a quantity of emission reductions (for example) does not require nations to use a particular implementation technique in phase two (national law enactment). Nations can comply with international agreements demanding national quantitative pollution abatement through national implementation of command and control regulation, performance standards,[171] allowance trading, or taxes (see generally Miller 1990). Any one of these instruments can produce a given quantity of reductions.

The ozone depletion regime has proven enormously successful. While a gaping hole still exists in the stratospheric ozone layer, scientists have predict that it will heal, unless some newer threats prove too serious (Antarctic ozone layer 2001), thanks to the vigorous actions of national governments requiring private parties to phase out production of ozone depleting substances in order to meet specific international goals.

The Montreal Protocol did contain a provision authorising the countries of the European Union to "jointly fulfil their obligations respecting consumption." This provision, however, did not lead to any significant departure from the principle of national selection of instruments for several reasons. First of all, parties to the Montreal Protocol did not use the provision to effectuate international trading. Second, the European Union, even at that time, had some of the characteristics of a nation state. Third, the provision did not clearly embrace emissions trading among private parties. Although this provision did not itself work a departure from the tradition of national, rather than international, instrument selection, it did provide the seeds for such a departure under the climate change regime. The joint implementation provisions in the Framework Convention on Climate Change evolved from the provision for joint fulfilment of obligations under the Montreal Protocol.

The climate change regime: departure from the national instrument choice model

The Framework Convention on Climate Change established a set of principles and a general aim of returning greenhouse gas emissions in developed countries to 1990 levels by the year 2000. In this respect, it seemed to follow the traditional model.

Yet, participants in the formation of the climate change regime soon found themselves engaged in a decade long debate about emissions trading, which had hitherto simply been an option for national implementation strategies, not the subject of international negotiations. The Framework Convention authorised joint implementation of the aim of stabilising greenhouse gas emissions, an extension of the Montreal Protocol's unused joint fulfilment concept beyond the bounds of the European Union. The phrase joint implementation did not have a clear obvious meaning when it first entered the agreement. Some countries believed that this clause should authorise countries to claim "credits" for activities it supported financially abroad. These credits would then justify producing less greenhouse gas reductions at home than the financing country would implement without the credits. Developing countries, however, quite plausibly, interpreted joint implementation to suggest that one country could help another achieve national emission reductions, with no crediting contemplated (see Gupta 1997, 116).

[171] Performance standards establish a quantitative limit for a particular pollution sources emissions or effluent. Command and control regulation, by contrast, specifies a particular technique for reducing pollution. Some writers, however, define command and control regulation more broadly to include both performance standards and standards that dictate control techniques.

Recognising that a mere reference to joint implementation raised more questions then it answered the parties to the Framework Convention agreed that the Conference of the Parties (COP)—the chief policy-making body for the climate change regime—would make decisions clarifying joint implementation at its first meeting. At that meeting, held here in Berlin, the COP decided that developed countries could not claim credit for activities implemented jointly with developing countries toward the Framework Convention's goal of stabilising developed country emissions at 1990 levels. The COP, however, authorised the development of joint pilot projects, including projects carried out in developing countries.

Developed country proponents of credits for emissions trading, however, continued to push for international agreement authorising international credit trading. Controversy over the future of emissions trading nearly scuttled efforts to adopt the Kyoto Protocol (McGivern 1997, 26), the agreement that ostensibly established a set of quantitative obligations respecting greenhouse gas emissions.

The adoption of the Kyoto Protocol, however, hardly put an end to the controversy. While no less than four separate articles in the Kyoto Protocol seemed to address the question of trading, those articles do not clearly establish the extent of permissible trading (Driesen 1998a, 30-35). Subsequent meetings at Buenos Aires and in the Hague failed to resolve a host of outstanding issues regarding allowance trading.

Even after the United States, the most powerful proponent of liberal allowance trading, withdrew from the Kyoto Protocol, the COP remained focused upon the trading issue. Meeting in Bonn, the COP agreed to very broad trading indeed, including allowance trading with developing countries which had not agreed to meet quantitative emission limits and the substitution of credits for certain types of forestry projects to offset otherwise required emission reductions. The Bonn agreement, as clarified through the Marrakech negotiations, resolved a number of outstanding issues of relevance to emissions trading, but did so in a way that reduces the transparency of the Kyoto Protocol and its stringency.

International agreement about instrument choice and accompanying design issues has proven elusive for very good reasons. Both the choice of international allowance trading and its design pose crucial issues going to the heart of the concerns and hopes of participating nations.

Proponents of allowance trading expect international allowance trading to ameliorate their serious concern about the cost of compliance. The Framework Convention recognises the legitimacy of this concern, and contains a cost effectiveness principle (see Driesen 1998a, 15-18). From this perspective, more liberal trading rules offer greater cost savings and therefore make ratification of the Kyoto Protocol more attractive.

Opponents of allowance trading, principally developing countries, also have legitimate concerns that have implications for allowance trading reflected in the principles animating the climate change regime. The climate change regime includes a developed country leadership principle as part of a negotiated response to developing country's equitable concerns (see Driesen 1998a, 11-15). The principle contemplates that the developed countries will clean up their own emissions before demanding that developing countries do likewise. This reflects a hope that developed countries would develop technologies to facilitate this task through their domestic efforts and then make these technologies available to developing countries to facilitate their assumption of quantitative obligations. Liberal trading may make it possible for developed countries to avoid domestic reductions and deployment of advanced technology as they comply with Kyoto targets (see Driesen 1998a, 41-46; see also Driesen 1998b). Developing countries also fear that developed countries will buy up the cheapest climate change amelioration opportunities available in the South, thus raising the eventual compliance cost for the developing countries.

Some countries and environmental groups have also expressed concern about the efficacy of liberal trading, usually discussed under the rubrics of "hot air" credits and "additionality." Good analysts realised early on that countries from the former Soviet Union might become a source of credits reflecting no environmental effort on their part. Greenhouse gas emissions fell in many of these countries after 1990 to levels below the Kyoto Protocol targets, because of economic collapse. If these countries could sell credits reflecting the difference between very low actual emissions and their modest emission reduction obligations, developed countries purchasing these credits would escape some or all of their emission reduction obligations. This would assure that Kyoto achieved less global emission reductions than it would achieve if the COP disallowed these credits. In fact, however, similar issues of claiming credit for activities that would have happened anyway arise in some other contexts as well, especially in the context of allowance trading with developing countries (see Driesen 2000; Free-Riders 2001, 242).

Credits for sinks also pose difficult issues of equiva-

lence (Andersson and Richards 2001, 174; German Advisory Council 1998; Ellis, 2001), which became part of the debate about ground rules for trading. Measuring the value of forestry projects poses difficult technical and conceptual issues.

In short, international instrument choice and international design of allowance trading has proven very controversial. And good reasons exist why the selection of instruments and design choices should generate controversy.

International instrument choice and the problem of increased demands for international co-ordination

This part of the article considers the effects of shifting the instrument choice decision from the national to the international level. It begins by pointing out that the need for consensus respecting international obligations frequently makes international decision-making about instruments (and anything else) more difficult than national decision-making. It explains how moving instrument choice to the international level may increase the risk of defections from international agreements or of failures to develop adequate international regimes. It then shows how the choice of international allowance trading creates a need for detailed international agreements about regulatory design, which may exceed the capacity of international institutions. This part also discusses the problem of international choice of instruments limiting national implementation choices, thereby perhaps causing nations to use implementation strategies ill-suited to national capacities. Finally, this part closes by noting that the type of international decision-making discussed here does, at least in theory, make possible the most efficient use of private sector compliance resources. But one might ask whether the pursuit of maximum theoretical private sector efficiency should override the competing public concerns this article discusses.

International consensus decision-making versus national decision-making

International treaty making involves a "notoriously slow and cumbersome" process (Sands 1999, 12). This process relies upon consensus as the primary decision-making procedure (see Wiener 1999). Any country can block consensus by simply declining to agree to an international agreement. This makes international decision-making far more difficult and less reliable than many national decision-making processes.

While nations sometimes try to expedite agreement by delegating some decisions to subsidiary bodies or by agreeing in a treaty regime to create voting rules requiring less than unanimity for subsequent decisions, these procedures cannot wholly circumvent the need for unanimous, or near unanimous, agreement to effectively address global problems. As the United States recently showed (unfortunately), countries who do not like the results of treaty negotiation can simply walk away. Most countries take their responsibilities toward the international community more seriously than the United States has with respect to climate change and often will put up with some rules they dislike in order to achieve agreements on matters requiring international co-operation. Still, the practical problem of avoiding defection and securing voluntary assent to carry out agreements makes international agreement slow and difficult.

By contrast, national governmental decision-making, while extremely varied and rarely completely satisfactory, seldom relies so fundamentally upon consensus. Democracies, for example, can make many decisions by a mere majority vote and frequently do so. This makes it somewhat easier to adopt legal rules, even in the face of some opposition.

Furthermore, delegation to administrative agencies at the national level can facilitate detailed rulemaking without the need for even a majority political decision on every detail of a regulatory regime. Diplomats seek to accomplish something similar when they agree to delegate some matters relevant to international lawmaking to subsidiary bodies. But in practice, the treaty regimes often require political bodies representing all of the parties to formally approve of all significant details. Furthermore, the subjects of this lawmaking, national governments, can always withdraw from a treaty in response to detailed decisions they dislike intensely enough. By contrast, the subjects of administrative lawmaking, private individuals and companies, must abide by administrative rules. Administrative processes make detailed decision easier at the national level than at the international level.

International choice of instruments: The risk of defections and failure to agree

Every matter requiring international agreement carries with it a risk of defection or a failure to reach agreement. Generally, expanding the number of things requiring agreement increases the risks of a regime collapsing or losing important participants.

Adding instrument choice to the international agenda when international agreement about instrument choice is not a theoretical prerequisite to reasonably effective regulation increases the risk of failing to

agree to a treaty. Absent international decision-making about instrument choice, delegates must still reach agreements about objectives and goals. And they mail fail to reach agreement upon these matters. But if the treaty making agenda only addresses goals, then agreement about goals may prove sufficient. Adding decisions about instrument choice to the agenda means that reaching agreement on goals does not suffice. Delegates must agree about both goals and instrument choice in order to conclude an international agreement.

While the separation of goals and instruments aids analysis, some relationships exist between goals and means. These relationships make avoidance of instrument choice theoretically impossible in a few cases, and politically difficult in others. Nevertheless, recognition of the value of avoiding theoretically unnecessary instrument choice at the international level might, over time, improve our capacity of addressing serious evolving international problems, perhaps even changing the politics of countries that have made instrument choice so central.

Avoiding many key aspects of international instrument choice seems easy enough when nations agree to quantitative goals. As pointed out previously, a wide variety of measures can meet quantitative goals.

Some problems, however, resist quantification. For these problems, agreement to a quantitative goal may facilitate failure, because nobody can judge compliance. And the alternative, decisions about what specific actions to take, involves selection of an instrument, specifically command and control regulation. In these cases international instrument choice does not increase the risk of failure, because the only alternative involves failure.

For example, existing data show that driftnets decimate fisheries (Blackwell 1998, 318; Hewison 1993, 319-23; Bryan 1995, 255; Jenkins 1993, 206-07; Davis 1991, 1066-73; Fjelstad 1988, 678-81). Because of this some countries have agreed to ban this technique and the United Nations has proposed a global ban. This amounts to a proposal to use command and control regulation, a ban on a particular technique, to address a problem. Enforcing a quantitative limit upon fishing on the high seas for a wide variety of species, the quantitative alternative, poses formidable enforcement problems that make it very problematic. This choice of command and control regulation, however, still leaves nations free to supplement the particular measure chosen, a ban on driftnets, and leaves selection of alternatives to the driftnet to states or private parties. Nevertheless, in cases where compliance with a goal may be very difficult to evaluate, international selection of a command and control instrument, while perhaps necessary, does limit national flexibility in the selection of instruments.

In many cases, however, a wide variety of instruments might meet a quantitative goal. In such cases, national governments may have a strong interest in securing international selection of instruments, not because instrument selection is essential to making progress on the issue, but for other reasons. In these cases, governments should consider the very real difficulties that international instrument selection can cause, including the risks of defection and failure.

International design of instruments: The risk of inadequate implementation, failure to properly resolve issues, and non-transparent loss of stringency

Some instruments require a high degree of international co-ordination of design details in order to work effectively. International allowance trading, because it relies upon international transactions to succeed, depends upon international adoption of sufficient design details to allow the programme to succeed. Because of this, international selection of international allowance trading as an instrument greatly increases the complexity of responsible international decision-making.

Selection of an instrument requiring international agreement about design details creates several serious risks. First, the need for a large number of detailed international decisions may increase the number of occasions for defections (see A brief analysis 2001, 13). Second, nations may seek to avoid these decisions (in order to lessen the risk of failures and defections), and therefore make insufficiently detailed decisions to make the programme work effectively. If the programme does not work effectively, widespread underperformance may follow an international agreement. This underperformance can shake confidence in the regime and make further progress more difficult. Third, nations may agree upon weak design criterion that redefine compliance in ways that reduce stringency in a non-transparent way. The Bonn and Marrakech agreements arguably exemplify this problem. For they allow sink credits that effectively reduce the emission reduction obligations agree to in the Kyoto Protocol.

International allowance trading's reliance upon international co-ordination makes reliance upon national selection of significant design decisions extraordinarily problematic. Absent international co-ordination, national governments might inadvertently claim credit for the same activity. This double counting, almost impossible to detect without international co-

ordination, would weaken treaty compliance. Furthermore, absent international co-ordination, many countries might find it in their interest to take no responsibility for checking the data justifying credits. The country in which the credit is generated has an incentive to take money for fraudulent credits, since they cost nothing to generate. The party purchasing the credit has an economic incentive to accept fraudulent credits, because they will cost less to purchase than credits reflecting well-monitored verifiable results. Indeed, the country accepting credits may lack the capacity to inspect projects abroad to verify data. The potential for a race to the bottom in a system that relies upon national control of design is enormous. Countries that limit credit generation to activities that have clear value cannot compete with countries facilitating cheap credits through questionable certification in the international market place. Monitoring compliance becomes extremely difficult absent effective international agreement about precisely what compliance consists of in a trading system, who determines compliance, and how compliance should be checked (Driesen 2000, 25-27).

Solutions to these problems, and others one could mention usually require adoption of international rules to solve them (see, e.g., Driesen 2000, 25-34). For example, the rules requiring a registry of emission trading transactions may limit double counting of emission credits, but required extensive international negotiations. Other issues, such as the methodologies for evaluating the value of sink credits remain unresolved even after Marrakech. Clearly, the extraordinary amount of detail in the Bonn and Marrakech agreements, and the decisions to require elaboration of yet more rules, reflects a recognition that international instruments require international legal rules.

While problems of incorrect accounting can occur within strictly national programmes as well, these problems will likely prove worse under an international trading scheme with insufficient constraining rules. Absent trading, an implementation committee can verify national compliance by checking emissions at the end of a compliance period with emissions at the beginning. Defects in the monitoring of reductions can cause errors in this process. But many countries may seek to minimise such errors, even if a few countries do not, and the possibility of international detection may increase incentives to avoid errors. A few countries irresponsibility, therefore, will only result in some losses from the emission reductions those countries must deliver. But, under trading, a few errant countries can provide fraudulent credits for a lot of the world. This greatly augments the potential emission reduction loss. The rotten apple may spoil the entire barrel. Similarly, a minority of countries can insist on weakening the entire regime through lax trading rules in international negotiations. Hence, international instrument choice may produce a more vigorous race toward the bottom than instrument choice through diffusion.

LIMITATIONS UPON NATIONAL INSTRUMENT CHOICE AND THE PROBLEM OF VARYING NATIONAL CAPACITIES

Absent international agreement about instruments, national governments will make choices about which instruments to use in phase two. As they plan to meet internationally agreed upon goals, they will choose national approaches to meeting those goals. Many countries, however, will consider the experience of other countries in choosing these instruments. Hence, the experience of the United States with emissions trading and of many European nations with energy taxes probably would inform many national decisions about instrument choice. Diffusion will take place to the degree that nations consider other countries' successful experiences germane to their latest efforts.

International selection of an instrument creates risks of a mismatch between instrument choice and national regulatory capacity. For example, an open market allowance trading programme might authorise credits from activities that the government has not decided to regulate. This means that a government using such a programme must develop capacity to check claims about credits from an extraordinarily wide variety of activities in order to adequately verify compliance under allowance trading. Absent adoption of such a programme, the government realise the same pollution reduction goal by setting ambitious targets for a handful of important sectors that it knows how to monitor. International allowance trading under the Kyoto Protocol might rely significantly upon credits from developing countries, i.e. from the countries with the least capacity to check private exaggeration of the value of credits.

Early in the climate change regime, a number of countries seemed interested in adopting carbon taxes as a regulatory instrument. But little progress has occurred in that area. Some of the lack of progress in developing a potentially very effective regulatory instrument may reflect the international focus upon a competing mechanism.

A decision to make the internationally selected instrument optional might formally leave open other options at the national level. Even in that case, a number of problems might limit national choices.

While international trade agreements should not limit

national options, the WTO might interpret them to do so. A country that allows credits from countries that it regards as having sufficient infrastructure to assure reliable monitoring might find that the General Agreement about Trade and Services forces it to accept credits from less reliable countries, because of the requirement of most favoured nation treatment (Wiser, 1999).

A similar problem might arise if a country decided to impose a pollution tax based on national emissions to meet local and international goals. An international legal regime favouring allowance trading might regard this as trade restrictive. Purchasing credits from abroad would not reduce the tax, but making local reductions would. One might view this as a restriction of international trade in allowances. A tax figured on the balance of allowances held would not conflict with free trade. But a country may have perfectly legitimate reasons to assess the tax on the basis of actual national emissions, such as the desire to secure local pollution reduction benefits or simplification of tax administration. Nevertheless, a carbon tax could raise issues under the GATS.

Internationally selected instruments can interfere with the effectiveness of nationally chosen instruments, even if they do not prohibit them. For example, the European Community proposal for community wide trading in carbon dioxide may conflict with a British trading regime. And allowance trading may limit the effectiveness of energy taxation. Absent trading, companies might reduce emissions to lessen the taxation burden, producing a net reduction in emissions. With trading, reductions in emissions in response to the tax may not lessen net emissions. Instead, companies reducing emissions in response to the tax may sell the resulting allowance into the market, allowing the buyer of the credit to emit more than otherwise would have been allowed. At a minimum, this complicates national implementation in countries relying upon pollution taxes.

International selection of a command and control technique—as in the driftnetting example—creates the most direct conflict with national instrument choice. But this choice may be essential to achieving the international goal.

International selection of a pollution tax regime poses less potential for direct conflict with national selection of competing instruments than international selection of allowance trading or command and control regulation. Governments can tax activities that they also regulate. But allowance trading or traditional regulation would reduce the revenues from the tax. International selection of a pollution tax regime would probably rely upon a policy decision to encourage flexible responses to a price signal. National regulatory programmes, either traditional or trading programmes, would then face pressures based on the argument that they interfere with the internationally accepted goal of flexibility.

Hence, international selection of instruments can interfere with national instrument choice. Since all instruments ultimately must be implemented at the national level, any mismatches this creates between national capacity and national implementation can limit the effectiveness of compliance.

THE EFFICIENCY ADVANTAGES OF INTERNATIONAL INSTRUMENT CHOICE

Nations do not need international instrument in order to have allowance trading. National governments can adopt national emissions trading programmes without international discussion of instruments, at least when the international agreement has general or quantitative goals. Such national programmes offer significant cost savings. As long as a national programme relies upon credits and debits created within its own borders, no international agreement or international co-ordination is needed.

But the principle of maximising private sector costs savings requires not just allowance trading, but international, indeed global, allowance trading. The cheapest way to meet a goal involves having the maximum number of cost saving solutions available, which implies a global programme. Indeed, economic modelling studies predict that expanding the geographic scope of international allowance trading under the climate change regime greatly reduces overall cost. International allowance trading, however, requires international co-ordination. That co-ordination creates a need for numerous difficult international decisions.

Conclusion

International instrument choice greatly augments the difficulties involved in making and implementing effective international environmental agreements. National governments can implement either national allowance trading or national pollution taxes without international agreement to realise cost savings. One has to wonder whether the objective of complete minimisation of cost in the short term justifies the large risks involved in requiring such detailed international decision-making.

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Uncertainty, Precaution and Global Interdependence: Implications of the Precautionary Principle For State and Non-state Actors

by Steve Maguire and Jaye Ellis***

The precautionary principle has emerged as one of the most contentious issues in multilateral environmental agreements.[172] This was certainly the case during recent negotiations leading to the Stockholm Convention on Persistent Organic Pollutants (POPs), which thus provided an opportunity to examine not only (a) the role and function of the principle in that particular regime but also (b) its wider role and function in international environmental law and policy.

Progressively becoming consolidated into international law, and widely acknowledged as an appropriate response by states to scientific uncertainty, the application of the precautionary principle in the international arena has nevertheless raised questions as to whether in fact it is leading to even more uncertainty and ambiguity. This paradox is explored in this article through a case study. The negotiations leading to the Stockholm Convention on POPs serve to anchor an analysis addressing the paradox of uncertainty posed by the principle.

Our findings indicate that a major function of the precautionary principle is the transboundary redistribution of the burden of scientific uncertainty. Whereas actors could formerly act as if they were ecologically independent by ignoring weak signals of transboundary damage, such behaviour is no longer acceptable. By lowering the threshold of scientific evidence of threats of serious or irreversible damage to human health or the environment required before acting, the precautionary principle can be seen to be speeding the process by which underlying ecological interdependence is being translated into policy interdependence. The precautionary principle, in other words, prompts states to take a much more coordinated approach to policy-making as they seek to manage interdependence. Thus, the institutionalisation of precautionary norms and ideas means that segments of what would once have been considered domestic policy-making are increasingly carried out at the international level.

The article is structured as follows: first, we introduce the precautionary principle, paying particular attention to the background of increasing global interdependence an drawing attention to the concept of "uncertainty" to which the principle is linked; second, we describe our method; third, we place the precautionary principle in the context of the Stockholm Convention; fourth, we describe some themes that emerge from analysis of actors' discourse on precaution and the Convention, offer a synthesis and propositions; and, fifth and finally, we discuss implications of the precautionary principle for international chemicals policy specifically and for environmental protection at the international level more generally.

Uncertainty, precaution and global interdependence

THE PRECAUTIONARY PRINCIPLE

It is the German law *Vorsorgeprinzip* that is typically credited as containing the conceptual origins of the precautionary principle (Freestone, 1991; Hey, 1992; O'Riordan and Jordan, 1995; McIntyre and Mosedale, 1997). By 1991 already, it was being heralded as "the most important new policy approach in international environmental co-operation" (Freestone, 1991: 36). Enshrined in the 1992 Rio Conference on the Environment and Development, the precautionary principle has also been incorporated into a number of international environmental instruments dealing with marine pollution, global climate change, ozone depletion, and biodiversity conservation. With its progressive consolidation in international law, the precautionary principle has—arguably, it is important to note—"become a full-fledged and general principle of international law" (EC, 2000: 10) and "crystallised into a norm of customary law" (McIntyre and Mosedale, 1997: 241).

The version of the principle most commonly referenced by state and non-state actors is that found in Principle 15 of the Rio Declaration, which states:

> In order to protect the environment, the precautionary approach shall be widely applied by States according to

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> their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

The precautionary principle does not require that precautionary action be taken in the face of scientific uncertainty, even when a certain threshold level of risk is involved. Rather, the principle facilitates and speeds the process through which, in situations of scientific uncertainty about threats of serious or irreversible damage to human health or the environment, the questions of whether and what measures should be taken are put on the table. In other words, application of the precautionary principle triggers policy deliberations; the most widely accepted formulation of the precautionary principle is, in Dickson's (1999) useful terminology, "deliberation-guiding" rather than "action-guiding".

Of course, answers to questions of whether and what measures should be taken depend upon the specific decision-making process through which the consequences of pursuing possible courses of action are considered. This process may include, or even take the form of, a cost-benefit analysis, but this is not strictly necessary, as any form of weighing of consequences can suffice. The weighing of consequences is nothing more nor less than a fundamental principle for good deliberation and policy-making. It requires policy-makers to think beyond the confines of an immediate issue-area to consider whether a proposed set of environmental measures might have undesirable impacts in other spheres, or if the risks that one seeks to avoid will simply be transferred to other media or other sectors of the population.

Because it does trigger policy deliberations, the application of the precautionary principle is often understood, falsely in our view, to inject politics into decision making processes that were previously guided by more objective principles based on sound scientific method. A preferable interpretation is that precaution makes explicit political considerations that were previously implicit. As Haas (1992: 11) points out:

> Many expected that scientists, because of their common faith in the scientific method, would make policymaking more rational. Yet even in cases involving what is regarded as a technical issue, policymaking decisions generally involve the weighing of a number of complex and nontechnical issues centering around who is to get what in society and at what cost. Despite the veneer of objectivity and value neutrality achieved by pointing to the input of scientists, policy choices remain highly political in their allocative consequences.

Consider the case where the reduction and eventual elimination of a chemical substance currently legal and available for use by economic actors is being contemplated. In the absence of precaution, policy-makers would avoid imposing phase-out and/or ban measures until significant evidence became available that, in the absence of such measures, specific forms of damage to ecosystems and/or to human health would result. This is the result of a distributive—and therefore a political—choice: the costs of continued use of the substance—actual *and* potential—would be imposed on the wider society and not on the economic actors who benefit from the substance's legality and availability.

The precautionary principle, by contrast, challenges policy-makers to exercise their decision making functions as arbiters of risks and benefits in society rather than seek to delegate them to scientists through inaction. To better grasp this, it is useful to consider precautionary policy deliberations within the context of the scientific uncertainty that triggers them. Even if scientists were able to tell policy makers a good deal more about the risks of proceeding with certain activities, they would not be able to provide scientific evidence of "acceptable" or "safe" levels of risk, for the simple reason that these are political judgements. Politics enters the equation in at least two ways. First, acceptable levels of risk cannot be assessed scientifically, even in conditions of perfect information, since the concept of acceptable risk is based on a given society's notion of what is safe or acceptable. Second, one does not make decisions about risk in a vacuum. A choice to cease an activity or practice when a certain level of risk is reached must be made in light of the range of impacts that cessation will or could have. If an environmental protection measure will impose costs and consequences in the form of decreased economic rents, increased threats of disease, decreased food production, or excessive policing, to name just a few possibilities, decision makers must consider the priorities held within a given society to determine whether the environmental measure should be imposed.

Thus, we take as our starting point the following proposition:

> Application of the precautionary principle lowers the threshold of evidence of serious or irreversible damage to human health or the environment necessary to trigger precautionary deliberations and, in many instances but not necessarily, precautionary actions.

By triggering policy deliberations in situations of potentially serious or irreversible damages characterised by scientific uncertainty, the precautionary principle thus challenges and makes work for policy-makers. As laid out in the next section, within a context of globalisation characterised by both increasing economic interdependence as well as increasing recognition of underlying ecological interdependence,

the policy work that is generated is inherently transboundary.

GLOBAL INTERDEPENDENCE

In the past few decades, international relations and foreign policies of states have more and more been concerned with economic issues as volumes of transboundary flows of goods, services and finances increased (Cooper, 1972; Keohane and Nye, 1972; Keohane and Nye, 2001). More recently, they have also come increasingly to be concerned simultaneously with ecological issues (Young, 1982; Young, 1989; Vogler and Imber, 1996). Indeed, growing recognition of what has been termed "our common future" (UNWCED, 1987) has led actors on the global stage to consider economic and ecological issues as difficult if not impossible to disentangle. As MacNeill, Winsemius and Yakushiji (1991: 4) put it:

> The world has now moved beyond economic interdependence to ecological interdependence—and even beyond that to a meshing of the two. ... To ignore one system today is to jeopardize the other. The world's economy and earth's ecology are now interlocked until death do them part.

Given underlying ecological processes, unilateral attempts by states to prevent transboundary environmental impacts are in most cases doomed to failure. Similarly, unilateral attempts by states to regulate economic activity involving products giving rise to environmental impacts could result in serious disruptions to interrelationships among states. This is because of both: (a) increasingly dense networks of transnational economic interaction through which such products and processes are traded and transmitted across borders; as well as (b) prior commitments, in the form of legal instruments (e.g. WTO), to not arbitrarily intervening in these networks. As Litfin (1999: 368) points out:

> Ecological and economic interdependence stand in uneasy relationship to one another. On the one hand, both concepts stress interconnections and mutual vulnerability. … On the other hand … ecological degradation … is a corollary of existing economic practices.

"Mutual vulnerability" of states is increasingly recognised therefore to be of a *dual* sort, with states acknowledging their vulnerability to both (a) transboundary environmental impacts (e.g. transboundary movements of pollutants, such as dioxins or furans, believed to pose threats of serious or irreversible damage to human health and/or the environment) as well as (b) transboundary economic impacts stemming from the implementation of environmental laws and policies in other jurisdictions to which they are linked through trade flows (e.g. bans on transboundary movements of products, such as organochlorine insecticides, believed to pose threats of serious or irreversible damage to human health and/or the environment). States, along with interested non-state actors, increasingly conceive of the regulation of these environmental and economic phenomena as matters for the international agenda, and policy-making to "manage interdependence" (Haas, 1990) has resulted (see, for example: Haas, Keohane and Levy, 1993; Vig and Axelrod, 1999).

UNCERTAINTY

The discussions above, when combined, suggest that transboundary policy-making to "manage interdependence" is potentially transformed in terms of both quantity and quality by the rapid ascension of the precautionary principle and the norm of precaution in international policy and law. In terms of quantity, a lower threshold of evidence of damages or risks required to trigger deliberations will lead to more deliberating (i.e. policy-making). In terms of quality, these policy deliberations will take place within—indeed, cannot escape—the context of high scientific uncertainty that triggers them. Unless policy deliberations are trivial and solutions to problems obvious, the outcomes of these deliberations may be experienced as "uncertainty" by interested actors.

This seems to be the case, judging from both the scholarly literature and comments on the precautionary principle made by state and non-state actors. Despite its widespread acceptance within international society and swift ascension within international law, "the precautionary principle has proved to be one of the most problematic developments in the field of international environmental law. The literature devoted to defining the principle is enormous and divisive." (MacDonald, 1995: 276). Many have expressed concern about the "uncritical accumulation of meanings, often contradictory and impractical" that scholars as well as state and non-state actors have linked to the precautionary concept with varying degrees of success (O'Riordan and Jordan, 1995: 192). Thus, although it is endorsed almost universally by state and non-state actors on the global stage, the precautionary principle has nevertheless emerged as a highly contentious issues in international relations: "the issue of when and how to use the precautionary principle, both within the European Union and internationally, is giving rise to much debate and to mixed and sometimes contradictory views," affirms the Director of the EC's Environment and Industry Directorate (Frommer, 2000: 6).

Ambiguity is leading to "arbitrariness" in policy-making according to some non-state actors (see Ma-

cilwain, 2000), while some state actors have expressed concern that unwarranted recourse to the precautionary principle can be a disguised form of protectionism, facilitating the erection of non-tariff trade barriers and thus making trade flows uncertain (EC, 2000; Frommer, 2000). Industry, too, has expressed its frustration with this "controversy around the precautionary principle", claiming, for example, that the "many opinions on the meaning and implementation of the precautionary principle as an element of environmental and public-health policy" are leading to undesirable "uncertainty" (Diriwaechter, 2000: 8). Similarly, legal scholars have also drawn attention to uncertainty that is being generated by the precautionary principle: "The assertion and 'codification' in international agreements and instruments of an ill-defined, ambiguous 'principle' has created uncertainty in international law" (Hickey and Walker, 1995: 423).

That the precautionary principle, universally acknowledged as a response to scientific uncertainty, is viewed as a generator of uncertainty is indeed ironic. The research reported on in this article explores this seemingly paradoxical outcome, and is in line with calls from other researchers for more theoretically grounded work into the principle's implications: "While many are sharply divided on the role that the precautionary principle should play in policy formation, the theoretical implications of the doctrine consistently get lost in the debate" (MacDonald, 1995: 276). This research seeks to address this shortcoming, posing the following research question:

> What is the role and function of the precautionary principle in international environmental law and policy?

In other words, what are the implications of the application of the precautionary principle in international environmental law and policy for state and non-state actors?

Method

Given that this research was aimed at theory-building, it was appropriate to begin with an initial exploratory case study (Eisenhardt, 1989; Yin, 1989). The Stockholm Convention on Persistent Organic Pollutants (POPs) provides an excellent opportunity to examine the role and function of the principle as well as its implications for state and non-state actors, because this MEA has "rare or unique" qualities that make it a logical candidate for "theoretical sampling" (Yin, 1989; Eisenhardt, 1989). Most significantly, the precautionary principle was a central and contentious issue throughout the POPs negotiations, with the language on precaution being one of the last items agreed upon. Indeed, upon finally achieving consensus, one delegate quipped that perhaps the new treaty should be called the "Stockholm Convention on the Precautionary Principle with some implications for POPs".

The direct research methodology (Mintzberg, 1979) guided data collection and analysis, and the main sources of primary data were (1) written texts (e.g. discussion documents, position papers, reports, pamphlets, etc.) produced by actors involved with the negotiations; (2) more than 40 formal interviews; (3) direct observation with note-keeping at negotiating sessions; and (4) historical and archival records to provide context and a more informed understanding of technical issues. These were supplemented by secondary sources such as *Earth Negotiations Bulletin*.

Data analysis followed a traditional grounded theory approach (Glaser and Strauss, 1967) using classic content analysis. Texts produced by actors—"first order" descriptions (Strauss and Corbin, 1998) contained in documents and interview transcripts—were coded, initially using a lexicon of terms drawn from actors' own words as they made claims about the precautionary principle (i.e. its constituent elements, its role or function in the Convention, and its implications for state and non-state actors, etc.), then grouping and clustering coded text under higher level, more abstracted conceptual categories to identify emergent themes and patterns of convergence or divergence (Eisenhardt, 1989). Through an iterative process of "enfolding findings with the literature" (Eisenhardt, 1989), constructs and relations—true to actors accounts but also meaningful in terms of existing theory—were developed and refined.

The Stockholm Convention on POPs

The use of synthetic chemicals in agriculture, industry and consumer products has increased dramatically during the twentieth century. Despite their utility, many chemicals, however, pose serious threats to human health and the environment. This is especially true of a category of substances known as "persistent organic pollutants" (POPs) which attracted international attention because of the particular configuration of properties which characterises them. POPs are substances which are: (a) persistent (i.e. they do not quickly degrade once released to the environment); (b) bioaccumulative (i.e. they become more and more concentrated in animals higher up food chains because of they way they dissolve and are stored in fat tissue); (c) toxic (i.e. they have adverse effects on human health and/or the environment); and (d) subject to long-range transport (i.e. they are a

transboundary problem).

In February of 1997, Decision 19/13C was adopted by the United Nations Environment Program's (UNEP) Governing Council. It set in motion the convening of an intergovernmental negotiating committee (INC) by UNEP, with a mandate to develop an international legally binding instrument to address an initial list of twelve substances with the properties described above. Individual substances of this so-called "dirty dozen" can be grouped into three categories: (1) agricultural chemicals [aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, toxaphene]; (2) industrial chemicals [HCB, PCBs]; and (3) unintended by-products [dioxins, furans[173]]. In addition, the INC was also mandated, via the establishment of an expert group, to develop science-based criteria and a procedure for identifying additional POPs beyond this initial dozen.

The INC met five times in total, beginning in June 1998 and ending successfully in December 2000. Throughout the negotiations, divisions were apparent on many issues, but, generally speaking, three major ones emerged as being the most contentious, settled only in the final stages of the negotiations: (1) financial resources and mechanisms; (2) measures to reduce or eliminate releases; and (3) the precautionary principle—whether, where and how the precautionary principle would be referenced in the Convention, with debate centred, in particular, on the Convention's objective as well as the provision for adding new substances.

On May 23, 2001, the Stockholm Convention on Persistent Organic Pollutants (POPs) was signed by some 91 countries and the European Community, while another 24 countries indicated their intent to sign in the near future. It remains open for signature for one year after this date and will enter into force once ratified by 50 signatories. Significantly, the objective of the Convention is "to protect human health and the environment from persistent organic pollutants" and this, "mindful of the precautionary approach as set forth in Principle 15 of the Rio Declaration on Environment and Development". Also, in the Convention's preamble, all parties acknowledged precaution as underlying their concerns and as being embedded in the treaty.

The Convention's provisions require countries to restrict or eliminate the production and use of intentionally produced POPs (i.e. agricultural and industrial chemicals), and to reduce releases of unintentionally produced POPs with the goal of their continuing minimisation and, where feasible, ultimate elimination. Signatories are allowed, however, to register specific exemptions, and many have taken advantage of this provision. In addition, DDT and PCBs warranted special treatment in the Convention, the former because it "still has an important role to play in saving lives and reducing the burden of malaria in some of the world's poorest countries" (WHO, 2000) and the latter because significant volumes will remain in "articles in use" for years to come. DDT use for disease vector control in accordance with World Health Organisation (WHO) recommendations and guidelines is permitted by states who have registered their intentions in a "DDT Register". PCB production is prohibited and parties must make "determined efforts" to identify, label and remove PCB-containing equipment, with elimination of uses thus targeted for 2025 only.

In addition, the Convention sets out requirements for the environmentally sound management and disposal of POPs wastes. Other obligations aimed at reducing or eliminating POPs include: the promotion of "best available techniques," "best environmental practices," and "the development and use of substitute materials, products and processes." Other provisions of the Convention address, inter alia: information exchange; implementation plans; public information, awareness and education; research, development and monitoring; reporting; effectiveness evaluation; non-compliance and dispute resolution. With respect to implementation, countries agreed to "cooperate to provide timely and appropriate technical assistance to developing country Parties and Parties with economies in transition", and developed countries also agreed to provide "new and additional financial resources" to enable developing countries and countries with economies in transition to meet their obligations.

Importantly, the Stockholm Convention is a living, evolving document, with a very important "precautionary" provision—Article 8—for identifying and adding additional substances beyond the initial "dirty dozen". It outlines specific criteria to be considered and obligates the Conference of the Parties (COP) to make listing decisions "in a precautionary manner." The four step process for listing additional substances—screening; preparing a risk profile; preparing a risk management evaluation, and; listing—includes explicit reference to the essential elements of the precautionary principle discussed earlier; "lack of full scientific certainty shall not prevent the proposal

[173] Dioxins and furans (PCDD/F): Polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF) are tricyclic, aromatic compounds formed by two benzene rings which are connected by two oxygen atoms in PCDD and by one oxygen atom in PCDF and the hydrogen atoms of which may be replaced by up to eight chlorine atoms.

from proceeding" from the risk profile to the risk management stage, with the latter involving a weighing of consequences that goes beyond a simple cost-benefit calculation, as a long list of "socio-economic considerations associated with possible control measures" are to be considered.

Analysis and findings

Analysis of actors' texts on the precautionary principle revealed two emergent themes related to "uncertainty" and "managing interdependence".

SCIENTIFIC UNCERTAINTY

Explicitly mentioned in almost all formulations of the precautionary principle, it is unsurprising that one emergent theme from our analysis of the precautionary principle discourses of state and non-state actors was "scientific uncertainty. More suprising, and interesting, is that, despite this common emphasis, no single, common understanding of this phenomenon so central to the application of the precautionary principle could be identified.

Some state and some non-state actors distinguished between different types of scientific uncertainty. For example, the International POPs Elimination Network (IPEN), a global coalition of more than 300 public health, environmental, consumer and other NGOs in 70 countries, united in their commitment to the elimination of POPs, promoted a typology of scientific uncertainty with three categories—missing data, indeterminacy, and ignorance—and argued that precautionary deliberations and actions were warranted in the face of all three (Schettler, 2000). Even ignorance as to the harmful, beneficial or neutral nature of impacts should trigger precautionary action in the form of vigilant monitoring, IPEN argued, if those impacts would be spatially and temporally widespread.

On the other hand, the discourse of the International Council of Chemical Associations (ICCA), a global association of chemical industry associations including the American Chemistry Council (ACC, USA), the Canadian Chemical Producers Association (CCPA, Canada) and the European Chemical Industry Council (CEFIC, EC), generally assumed that scientific uncertainty was of the first kind in IPEN's typology. Implicit in their statements is a belief that research can eliminate scientific uncertainty over time, as evidenced in their characterisation of the precautionary principle as "an approach to risk management" (ICCA, 2000a):

> The precautionary principle articulates an approach to risk management in circumstances of scientific uncertainty, reflecting the need to take prudent action in the face of potentially serious risks without having to await the completion of further scientific research.

In addition, ICCA (2000a) explicitly rejected IPEN's notion that ignorance is a form of scientific uncertainty that can trigger precautionary action:

> The precautionary principle applies only when there is a "lack of *full* scientific certainty" regarding the degree of risk, not where there is an absence of any scientific knowledge.

With a goal of clarifying their own approach to using the precautionary principle, the European Commission brought different typologies of scientific uncertainty to the fore but also hinted that such distinctions may not ease the task of risk evaluators, acknowledging that "this issue is very complex" (EC, 2000: 14). Significantly, the EC explicitly recognises that "scientific uncertainty may also arise from a controversy on existing data" (EC, 2000: 13) as well as from missing data.

In the EC's view, when confronted with scientific uncertainty about serious or irreversible damages to human health or the environment, "decision-makers face the dilemma of having to act or not to act" (EC, 2000: 14). In other words, they deliberate, and when they do so, they face the "dilemma of balancing the freedoms and rights of individuals, industry and organisations with the need to reduce or eliminate the risk of adverse effects to the environment or to health." (EC, 2000: 7). Thus the decision to act or not is an "eminently political" one, as it is "a function of the risk level that is 'acceptable' to the society on which the risk is imposed" (EC, 2000: 15).

POLICY UNCERTAINTY

The second type of uncertainty that emerged as a theme from our analysis of the precautionary principle discourses of state and non-state actors we have labelled as "policy uncertainty".

This theme is most prevalent in the texts produced by ICCA as they sought to eliminate or at least limit explicit mentions of precaution and the precautionary principle in the body of the text. Though they employed a number of different words and phrases—for example, ensuring consistency, avoiding arbitrariness, etc.—all can be usefully captured by the concept of eliminating, or at least managing, "policy uncertainty", which was clearly the concern of industry. For example, ICCA (2000b) argued that reference to precaution outside of the preamble to the Convention could create "ambiguous obligations" for signatories:

> The "precautionary principle" should be defined as it is

> in Principle 15 of the Rio Declaration and should only be referenced in the Preamble to the Convention. Including it elsewhere, such as in the Objective or the operational sections of the Convention, could create new and ambiguous obligations for parties. Including the precautionary principle in the provisions dealing with the selection of additional candidate POPs could leave the criteria for such selection wide open so that they would no longer be based on science and the Convention could lose its focus on priority chemicals of real concern, that meet the criteria for POPs.

Similarly, their position paper on the precautionary principle produced for INC-5 (ICCA, 2000a) was concerned with "consistency":

> The ICCA principles are intended to assure that the precautionary principle is implemented in a consistent and transparent manner.

Industry also sought refuge from this potential inconsistency and policy uncertainty through recourse to the relative certainty of "established" "substantive law":

> Indeed, industry today faces the prospect of having some chemicals, chemical groups, and entire technologies banned or strictly controlled as a result of government decisions that seem to apply the precautionary principle in a way that disregards important science and allows risk management decisions to be made on the basis of hazard, or intrinsic properties such as persistence or bio-accumulation alone. The principle should offer guidance to lawmakers. However, the principle does not override established law. It is important to recognize that the principle does not replace substantive law as a basis for action. Moreover, whatever the basis for action, decisions applying the principle are subject to legal redress and accountability.

Interestingly, different actors had different preferences for what form the policy uncertainty should take. For example, ICCA argued that the appropriate approach to actual and potential POPs is risk management, whereas IPEN insisted that the risks posed by these substances are unmanageable. This dichotomy drove the respective regulatory approaches proposed by these two groups. ICCA argued that the criteria for making a decision whether or not to list a substance should be black-and-white: clear thresholds should be established, and only those substances that cross these thresholds should be listed as POPs. This reflects ICCA's desire to avoid creating legal and economic uncertainty: it sought restrictive listing criteria that would operate in a predictable or black and white manner, such that firms would be able to assess, with a relatively high degree of certainty, whether a substance would be listed or not. They also argued that this was required to ensure a regime that could be "feasibly and practically managed internationally."

IPEN, on the other hand, sought a much greyer set of listing criteria that would allow a wider class of substances to be introduced into and to make it through the listing process. IPEN was willing to live with a fairly high degree of uncertainty regarding which substances would come to be identified as POPs in the screening stage

Their preferences for black and white or grey decision-making processes was inverted in the context of policy-making once the risk management stage of the listing process was reached. ICCA expressed a strong preference for a greyer decision-making process regarding which actions to take with respect to substances identified as POPs, arguing that a whole range of risk management and regulatory techniques and mechanisms should be available. IPEN, in keeping with its scepticism regarding the viability of managing the risks associated with POPs, preferred that decisions regarding policy approaches to POPs be black and white: such substances should be eliminated.

ICCA (1998), in their argument for a scientific basis for prioritising and listing additional substances beyond the dirty dozen, explicitly drew attention to the implications of policy uncertainty and the premium they placed on predictability. They argued that too much policy uncertainty was not in the interest of other actors nor the new POPs regime:

> All stakeholders can predict the outcome of science-based prioritisation, to the extent that data are available. This enables governments to plan policy and industry to plan investment and change in its product portfolios. Industrial planning takes place in a lengthy time frame (10 years minimum) and *uncertainty* can often be a deterrent to necessary change.

SYNTHESIS

Drawing together the facts of the case, our analysis, and the basic proposition we took as a starting point leads to a couple of propositions. The first restates our starting point, but is modified slightly to highlight its significance for global environmental problems and to be more conducive to deriving implications for state and non-state actors in an international political economy characterised by mutual vulnerability caused by both ecological and economic interdependence.

Proposition 1: Application of the precautionary principle internationally to global environmental problems lowers the threshold of evidence of serious or irreversible transboundary damage to human health or the environment necessary to trigger international precautionary deliberations and, in many instances but not necessarily, international precautionary actions in the form of policy harmonisation, coordination, or even integration.

The Stockholm Convention provides a vehicle for the

harmonisation and co-ordination of domestic policies regarding the substances it covers. The mutual vulnerability of states with respect to POPs arises, in part, from the physical characteristics of these substances, particularly their capacity to be transmitted over large distances and to persist over long periods of time. But it also arises, in part, from different levels of risk aversion in various jurisdictions along with different policy approaches to the regulation and control of POPs. Unilateral attempts by a state to keep POPs off its territory are bound to be of only limited effectiveness, and could result in serious disruptions to interrelationships among states. Thus, an international instrument has much utility.

Our second proposition is our main one. It relates the two types of uncertainty which we found preoccupying actors, is consistent with a view of the precautionary principle as a "deliberation-guiding" (Dickson, 1999) tool, and reconciles the seeming paradox of a response to uncertainty which generates uncertainty:

Proposition 2: By triggering precautionary deliberations and, in many instances but not necessarily, precautionary actions, an important function of the precautionary principle is to redistribute the burden of scientific uncertainty.

The precautionary principle redistributes the burden of scientific uncertainty from vulnerable populations (of humans and/or other species) exposed to potential hazards, to the producers of those hazards. Whereas, in a non-precautionary world, the producers of hazards could continue to act "as if" no hazard was being produced, this is no longer tenable. With a lower threshold of evidence required, there is a higher probability that, when issue or policy entrepreneurs make the connection between a possible serious or irreversible transboundary harm and some industrial/economic activity, precautionary deliberations—and possibly but not necessarily precaution actions—will be undertaken.

Unless the precautionary deliberations triggered by the application of the precautionary principle in the face of uncertainty are trivial, there will be uncertainty as to what precautionary action is to be taken by policy-makers. Thus, the uncertainty about impacts on human health and the environment are initially *translated* into uncertainty about the value of industrial/economic assets. *Scientific uncertainty is thus translated into policy uncertainty.*

Where the precautionary principle is not invoked, this absence of scientific evidence allows a certain level of legal and economic certainty to persist: actors with a stake in access to chemical substances with POPs-like properties will have a fairly high degree of confidence that access will not be rendered more difficult through regulation. But as the precautionary principle comes to be more influential internationally and domestically, and particularly as it finds its way into the texts of statutes and conventions, a certain degree of uncertainty about the regulatory environment is created. Such is the case with respect to substances that share some of the characteristics of the "dirty dozen" but that have not yet been designated as POPs. Those with a stake in these substances face uncertainty as to whether these substances will come to be regulated. With this uncertainty regarding the regulatory approach that will be adopted regarding particular substances comes economic uncertainty. Investments in activities or processes that depend on access to substances that may come to be designated as POPs may lose some of their value as a result.

In a regulatory environment not influenced by precaution, populations exposed to POPs or potential POPs are vulnerable to the actual or potential effects of such exposure, and as such are vulnerable to actions and decisions of actors that produce or use POPs or potential POPs. When the precautionary principle is introduced into the regulatory environment, those with a stake in the substances become vulnerable to the regulatory process. Whereas without precaution, the burden of scientific uncertainty is borne by exposed populations, the introduction of the precautionary principle introduces different forms of uncertainty, the burden of which is borne by those with a stake in the substances.

It is important to note that uncertainties are created for those with a stake in the substances from the moment that precaution begins to gain influence among those responsible for or exercising influence in regulatory processes. Even if no evaluation of a substance for the purposes of a listing decision is underway, the mere fact that a substance displays certain characteristics of POPs, combined with the fact that the precautionary principle is available to those responsible for making listing decisions, means that the "risk" that the substance will be regulated has been magnified. The legal and economic uncertainty ceases once a decision to list a substance is made, in the sense that the "risk" of regulation has now been realised and the impact on asset-holders can be determined. A decision not to list may reduce but certainly does not eliminate uncertainty, as the substance could potentially come forward as a POPs candidate at a later time.

Precautionary action does not reduce scientific uncertainty, but rather reduces the burden of that uncertainty on exposed populations. Such action reduces

the uncertainty on asset-holders in the sense that potential regulatory action has crystallised into actual action, with the caveat, of course, that regulations could be tightened or expanded, loosened or constricted, in the future.

Implications for state and non-state actors

THE PRECAUTIONARY PRINCIPLE LINKS PHENOMENA AND ISSUES IN NEW WAYS THAT ARE AGENDA-DEFINING

Who would have thought, only twenty years ago, that the breast milk of Canada's Inuit mothers would affect chemicals policy in Australia? Waste management in south-east Asia? Public health and anti-malaria campaigns in sub-Saharan Africa?

By lowering the threshold of evidence required before deliberations on regulation of substances are initiated, the precautionary principle forces economic activity sitting atop the biosphere, in the econosphere, to adjust to underlying ecological interconnectedness. A series of phenomena have influenced the development of international chemicals policy, including an emerging shared understanding among scientists and policy-makers regarding the validity of the ecosystem approach as a basic framework for environmental law and policy; increased risk-aversion in domestic populations; scientific reports of risks posed across time and space by POPs; and perceptions of international society as made up of interdependent, rather than independent, actors, to name but a few. But there is little doubt that, in the absence of the precautionary principle, the Stockholm Convention in its current form would not have been concluded. It might have been possible to conclude a treaty regulating a narrow class of substances—the "dirty dozen" or some subset thereof only—whose health and environmental risks are no longer a matter of scientific conjecture. It may also have been possible for that convention to have included provisions on adding new POPs for regulation. However, the international regulation of substances whose risks to environmental integrity and human health were not well-documented would likely not have occurred. It was repeatedly noted by participants in the negotiations, including representatives of states, that the Convention itself is "precautionary."

Precaution as a policy framework makes it much easier for policy entrepreneurs seeking to focus attention on environmental protection issues to have those issues placed on political agendas. The precautionary principle, particularly in the form in which it was incorporated into the Stockholm Convention, does not effect a reversal of the burden of proof; in other words, the invocation of precaution does not place on proponents of an activity the burden of proving that that activity poses no risk, or poses no unacceptable risks, to environmental integrity or human health. It does, however, remove the burden of proving risk from the shoulders of those who would regulate an activity in the interest of environmental protection or human health. The precautionary principle thus enhances the power of scientific data pointing to the potential for harm.

The precautionary principle alters the balance between science and politics in law- and policy-making. Whereas in the absence of precaution policy-makers would be inclined to wait for scientists to present concrete evidence of a cause-effect linkage between exposure and harm, the precautionary principle points to the limits of scientific methodology and to the need to undertake policy deliberations, and make policy decisions, in conditions of scientific uncertainty.

THE PRECAUTIONARY PRINCIPLE INCREASES POLICY COORDINATION AMONG STATES

Perceptions of mutual vulnerability and interdependence with respect to POPs played a role in pushing states to adopt a co-ordinated approach to their regulation. With respect to the "dirty dozen," a certain amount of consensus regarding risks and the need for regulation had been reached. However, the possibility of listing, on a precautionary basis, other substances having POP characteristics and subjecting them to international regulation has much broader implications. Signatories, in articulating a set of criteria according to which these substances would be evaluated, had in effect to identify a common level of risk aversion. The listing process sets in motion a process that could have significant implications for domestic policy. It would be an exaggeration to say that states have surrendered their sovereignty by creating the possibility of listing and regulating at the international level a potentially wide range of substances. States retain influence and, ultimately, control over the decision-making process. However, once a substance is submitted for screening under the Stockholm Convention, states must, at a minimum, engage in processes of deliberation, negotiation and, ultimately, decision-making at the international level.

Conclusion

The precautionary principle focuses attention on substances of *potential* concern, triggers and guides deliberations on policy-making in conditions of un-

certainty. It requires policy-makers to assume a greater responsibility for decision-making under uncertainty, as it makes it much more difficult for those decision-makers to await conclusive scientific evidence of the harmful nature of a substance before action is taken. It is true that the principle has the potential to render the regulatory environment much more uncertain, as the "risk" of introducing new regulations and prohibitions on substances that *may* cause harm is increased. However, this policy uncertainty is a response, and in our view a legitimate one, to conditions of scientific uncertainty, the burden of which previously fell almost entirely on exposed populations.

Although the Stockholm Convention reflects a relatively high level of risk aversion, it is not yet clear whether this will be translated into precautionary action through decisions to list substances in the face of uncertainty. It is possible that the provisions on listing will be interpreted narrowly, or that, in the process of weighing the consequences, consensus on the need to take precautionary action will be too difficult to reach. However, the presence of the precautionary principle in the Convention means that parties will be compelled to engage in deliberation about appropriate policy responses to potentially dangerous chemicals, and will, even in making decisions not to take action, be required to justify their decisions in formal as well as informal arena.

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The Clean Development Mechanism: A Playing Field For New Partnerships

by Charlotte Streck *

Today, in the run-up to the Earth Summit 2002, the international community is more than ever required to increase the effectiveness of existing environmental regimes, international agreements, and institutional structures. To this end, it is not only necessary to review institutional arrangements but also to watch out for new and sustainable forms of implementing treaties. This article will take the Clean Development Mechanism ("CDM") as described in Article 12 of the Kyoto Protocol and examine its potential for promoting sustainable development through innovative implementation networks. While governments still were the decisive players in negotiating and adopting the Kyoto Protocol, private sector and civil society organisations played a crucial role as lobbyists and advisers in the negotiations process. When it comes to implementing the Protocol and to break its clauses down to concrete measures, the involvement of non-state actors is likely to further increase. Such cross-sectoral collaboration goes beyond traditional conceptions of special interest politics, giving non-state actors a variety of voluntary, semi-formal, and formal roles in the implementation process.

At the outset, this article will briefly describe some underlying trends that are transforming the global system and challenge governments to come to grips with an increasingly interdependent and globalised world. As traditional processes of inter-state co-operation come to their limits, horizontal and vertical network structures show a promising path to mitigation of complex domestic and transboundary problems. The CDM serves as a concrete example of how new collaborative networks consisting of nation states and non-state actors could help implementing international treaties. The article will trace the history of the UNFCCC process to provide a sufficient background for a more detailed discussion of the CDM. On that basis, it will provide an analysis of the Prototype Carbon Fund ("PCF") administered by the World Bank as an innovative model of co-operation between the private and the public sector under the forthcoming framework of the CDM, as well as some lessons learned.

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Challenges for global environmental policy in a changing world

In order to strengthen the system of international environmental governance, it is necessary to increase the effectiveness of existing regimes, international agreements, and institutional structures. Creative institutional innovations are needed that connect governments, international organisations, civil society, and the corporate sector in order to better address the growing number of global public policy challenges (Witte, Reinicke, Benner: 2001). Tell-tale qualities of effective regimes are flexibility and a capacity to adapt institutions, rules and procedures, but without losing sight of the overall objective to improve the state of the environment (Hertin, Scoones, Berkhout: 2000, 4). At the end it is not institutional effectiveness that determines the state of the environment but progress in fighting against environmental degradation. A resource regime that is operating in an institutionally effective manner cannot be the solution if at the same time it is failing to improve the quality of the natural environment. Therefore, in the debate on reforming international environmental governance, policy makers should refocus on the designing, implementing and evaluating international environmental agreements.

Global governance still strongly relies on traditional forms of inter-governmental co-operation and often does not encompass non state actors. However, in order to produce tangible and sustainable results, governance must today be understood as also involving NGOs, citizens' movements, multinational corporations, and the global capital market. Transnational corporations are increasingly important international players and have gained political leverage relative to states and international organisations. In the wake of economic, social as well as cultural globalisation, integration of the private sector is crucial to find effective solutions to international problems. At the same time, political liberalisation as well as technological change have led to the rapid growth of transnational advocacy coalitions. Non-governmental organisations ("NGOs") are often committed to single policy issues and not only influence decisions of national governments very effectively, but also build strong international alliances. In the field of the

environment alone, there are thousands of NGOs throughout the world, who devote significant resources to create international networks and to launch international campaigns (Tamiotti, Finger: 2001; Rittberger: 2000; Wapner: 2000; Keck, Sikkink: 1998; Lipschutz: 1996). Due to this developments, the international debate on environmental governance and its regimes has moved from a focus on governments on to a multitude of partners; from the international level to governance at different levels and from a largely formal, legalistic process to a less formal, more participatory and integrated approach. Today corporate and financial interests as well as consumer and environmental groups have gained not only a louder voice, but are also fundamental in delivering action and implementing an international consensus as expressed in a treaty.

Environmental treaties can only reach their objectives if all parties and all affected no-state participants aim to comply with the rules agreed on, and if the treaty gives sufficient incentives to co-operate and to contribute to agreed remedial measures. Wherever possible they should create win-win situations, and where such self-enforcing coalitions of mutual benefit are not possible to forge, they should rely on the right dose of obligations that parties have a genuine interest in translating into national law, and that are backed by national enforcement structures.

The participants in the international sustainable development dialogue traditionally have been government environment ministers and representatives, environmental NGOs, and development economists with specialised interests in environment. Under a broader model which internalises costs for the environment and development, the scope of active participants in the process expands considerably not only to include other ministries such as finance and economy but also to include private companies, bankers, brokers, asset and fund managers. Businesses and their organisations, consumer groups, environmental advocacy groups, foundations, and labour unions have a direct stake in the outcome of public policy and their range of activity is not bound by national borders. In many cases these actors have the appropriate knowledge and access to better information than governmental institutions. In order to reach sustainable models of environmental governance, the creation of public-private co-operation has to be promoted.

The concept of Global Public Policy Networks ("GPPNs") as describe by Reinicke (Reinicke, Deng: 2000; Reinicke: 1999/2000; Reinicke: 1998b) provides an useful attempt to describe and analyse such co-operation models. The ideally trisectoral networks are characterised by collaboration between governments, representatives of civil society and the for-profit private sector. In the model case, they are inclusive towards the South and the North, and integrate international, regional, national, and local actors.

The GPPN model acknowledges that increasingly complex political, economic and social systems cannot be governed by only a single sector, the public one, from a single level, the national one. Structures that build on networks create bridges between the public, the for-profit and the non-profit sector and pull human and financial resources together to find solution for problems that one sector cannot solve by itself. It is essential that the people and institutions that might participate in such networks bring different resources to the table. The complementary of such resources and their synergies are key for the success of GPPNs. In working together, networks add to more than to the sum of their parts. Ultimately, GPPNs represent a potential strategy for governments, businesses, and NGOs to address the challenges of interdependence and globalisation in a participatory, effective, and sustainable manner.[174]

Policy networks are not just another attempt in creating institutions. They follow a dynamic approach, both in process and structure. In a policy cycle they can fulfil different functions: They can help to put issues on the international agenda and then kick off a discourse to debate the issues at stake. But they can also facilitate international processes, structure politically contentious multi-stakeholder relationships, set global standards, disseminate knowledge and address participatory short-comings. But, they can also help to translate the results of negotiations into action and improve willingness or capacity on the part of different stakeholders to comply. The Clean Development Mechanism, which will be described and analysed in more detail in the following, provides an example for such an implementation network.

The intrinsic nature of climate change makes it impossible to tackle with the problem of global warming nationally. It requires a joint effort not only from governments but from all parts of society. The climate change regime tries to provide a framework for such an international joint effort. It is the fact that the problem can only be solved by involving every part of the society that makes the design of the regime and its pillar treaties so complicated and it will be only in several years from now that it can be decided if the regime can successfully address the problem. In order to reach tangible results, the implementation of the

[174] See: Global Public Policy Network Project: www.globalpublicpolicy.net/AboutGPP.htm.

treaties should be monitored and evaluated carefully. A preliminary analysis of the Kyoto Protocol shows that the architecture contains structures that make a network approach to the problem possible and likely. Especially the flexible mechanisms as established under Article 6 and 12 of the Kyoto Protocol mark a first step in the right direction.

Background: UNFCCC and the Kyoto Protocol

The *United Nations Framework Convention on Climate Change* (UNFCCC)[175] was adopted on May 9, 1992 at UN headquarters, New York, and opened for signature at the Earth Summit in Rio de Janeiro in June 1992. Three months after the 50th ratification had been submitted, the Convention entered into force on March 21, 1994. As a framework Convention, the UNFCCC follows an approach of general objectives and basic principles and obligations. At the occasion of the third session of the Conference of the Parties ("CoP") to the Climate Change Convention, which took place in Kyoto, Japan, in December 1997, the parties negotiated the Kyoto Protocol, which contains targets for industrialised countries that are listed in Annex I to the UNFCCC ('Annex I countries') to reduce emission in 2008-2012 (first commitment period). The Protocol commits Annex I Parties to individual, legally-binding targets to limit or reduce their greenhouse gas emissions, adding up to a total cut of an average of 5% from 1990 levels in the period 2008-2012. Parties still needed to agree on details on how to administer, use and implement the flexible mechanisms, additionally to develop the compliance system outlined in the Protocol, and provisions for the land-use change and forestry sector, methodologies for estimating emissions and removals, and reporting obligations.

Where the flow of responsibility and authority is specific to the regime in question, evoking new politics and new sets of mechanisms every time, most initial decisions are taken in complex relationships between different agents of policy. Because public actors are the only to legitimately manage these relationships, governments are nodes for communication and decision-making in international negotiations, constantly interacting with concerned groups and affected stakeholders (Hertin, Scoones, Berkhout: 2000). However, their negotiating behaviour and positioning in the negotiations process is always influenced by their perceived and real interests. In the context of the Kyoto Protocol these are for example dependence on production and use of fossil fuels, vulnerability to the impacts of climate change, the availability of affordable options to reduce greenhouse gas emission reductions and to adapt to climate change, pressure from NGOs and domestic constituencies. These constituencies played more than an indirect role in the process of negotiating the UNFCCC, the Kyoto Protocol and all rules and guideline thereunder. NGOs and scientists, which form the core of the world's civil society, have had a role in the global warming issue from the very beginning—first in raising public awareness of the gravity of the problem, and, early in the negotiations, in keeping the issue in focus (Sharma: 2000). From the for-profit side, representatives of oil and gas companies were eager to limit the impact of the emerging regime on fossil fuel industries. Alternative energy providers or consultant companies, on the other hand, were driven by the perspective of profitable businesses arising from the negotiations table. At the 7th CoP to the UNFCCC, 172 governments were participating in negotiations closely observed by representatives of 234 intergovernmental, non-governmental, private sector companies and other observer organisations. These organisations represent the different interests that governments need to take into account in their negotiations strategies. But the role of observer organisation is not limited to mere lobbying of particular interests. They also represent valuable knowledge and expertise that governments are not longer able to maintain. In some cases representatives of non-governmental organisation were even invited by countries to form part of the official delegation of that country. While business representatives mainly come from industrialised countries, representatives of civil society groups come from both the developing and the developed world. Since the first CoP of the UNFCCC in Berlin 1995, when NGOs from the North and South came together under a coalition called the Climate Change Network (CAN), NGOs try to co-ordinate efforts and to build a consolidated NGO opinion.

After the completion of the negotiations around the Kyoto Protocol the focus of activities will shift from intergovernmental negotiations to national and regional implementing measures. When it comes to concrete activities to abate greenhouse gas emissions, public actors are dependent on co-operation of non-governmental entities. Only if concerned industries reduce their emissions and the general public supports policies that limit national greenhouse gas emission, the Kyoto Protocol can be implemented successfully.

The Protocol provides flexibility to Parties to achieve some portion of the required emission reductions

[175] United Nations Framework Convention on Climate Change, 31 I.L.M. 849 (1992), May 29, 1992.

beyond their own borders through the use of a variety of economic instruments. Known as the 'flexible mechanisms', the Protocol foresees the creation of markets for greenhouse gas emission reductions through project-based emission crediting or emission trading. Two of these instruments are available only to countries with qualified targets: Joint Implementation ("JI") set forth in Article 6 and Emission Trading set forth in Article 17 of the Kyoto Protocol. But the Kyoto mechanisms also include in Article 12 a Clean Development Mechanism, which aims to enhance cooperation among industrialised and developing countries to achieve sustainable development and reduce emissions. As the global climate system benefits from reductions in greenhouse gas emissions wherever they occur, making reductions in countries with economies in transition ("EITs") or developing countries as part of a national strategy of industrialised countries, supplemental to national mitigation policies, will make the costs of reaching emission reductions targets cheaper.

New models of inter-sectoral cooperation under the Clean Development Mechanism

Joint Implementation and the Clean Development Mechanism provide for the transfer or acquisition of emission reduction credits based on project activities in developing countries or countries with economies in transition. JI permits Annex I countries to meet their commitments through investments in or the forward purchase of emission reductions from carbon abatement projects in another Annex I country. The CDM operates similarly, however, since CDM host countries are developing countries the CDM establishes an interface between Annex I and non-Annex I countries, and is the main element of the Kyoto Protocol that bridges the divide between the developing and industrialised worlds.

The Clean Development Mechanism promotes investment in developing countries that reduces greenhouse gas emissions and fosters sustainable development. Taking developing countries' concerns into account the CDM establishes a scheme of joint implementation between developed and developing countries. It provides an important tool for involving developing countries into the Kyoto Protocol. As the participation in the CDM requests ratification and compliance[176] from all participating Parties, the CDM provides an initiative to ratify and a tool for ensuring compliance with the Protocol.

Clean Development Mechanism projects hosted by non-Annex I countries are expected to generate emission reductions that once they are certified become Certified Emission Reductions or CERs. Industrialised Annex I countries may use CERs to help comply with emission reductions obligations under Article 3 of the Kyoto Protocol. CDM projects pass through a common project cycle, beginning with the initial project idea, then flowing through implementation, and ending with periodic verification and certification of emission reductions. Once the Kyoto Protocol has entered into force, the ultimate authority over the CDM is the governing body over the Kyoto Protocol, the so called 'Conference of the Parties to the UNFCCC serving as the meeting of the Parties to the Kyoto Protocol' ("CoP/MoP"), constituted by the Parties who have ratified the Protocol. An 'Executive Board' which reports to the CoP/MoP will supervise the day-to-day operation of the CDM as carried out by 'Designated Operational Entities'. The Executive Board will issue the Certified Emission Reductions after a verification report of a project and a certificate on emission reductions has been submitted by the Operational Entity in charge with verifying the project. These Entities will carry out many operational activities, such as project validation or certification of emission reductions.

The CDM is more than a simple burden sharing mechanism where the North covers compliance costs of the South and offers financial aid and technology transfer. The CDM instead provides actors from Annex I countries with an intrinsic initiative for investments in non-Annex I countries. The mechanism makes at the time the treaty more acceptable for G77 countries and gives industrialised countries a tool at hand for off-setting domestic emissions by providing financial resources for projects in developing countries. While helping countries to meet their emission reduction targets under the Kyoto Protocol, Article 12 Kyoto Protocol establishes a market based mechanism that addresses the problem of equity and promotes sustainable development. As emission reductions of greenhouse gases of the same quality and effect can be generated at any place of the world, the problem of global warming is prone to be addressed on an international level through mechanisms based on the principle of trading and selling of emission reduction off-sets. The CDM relies on market forces to improve the implementation of the Protocol which is key to its effectiveness because the treaty aims to constraint not just governments but a wide array of actors, including individuals, companies, and agencies whose behaviour does not change simply

[176] Compliance with 'the methodological and reporting requirements under Article 5, paragraphs 1 and 2, and Article 7, paragraphs 1 and 4, of the Kyoto Protocol" is a participation requirement for countries participation in the CDM (see: FCCC/CP/2001/13/Add.1 Draft decision -/CMP.1 Nr. 5).

because governments have made international commitments. Market-based mechanisms are a tool to manage open-access resources or public goods in pricing the formerly free goods. Wherever command and control regulations are unable to internalise the external costs of the environment, the creation of markets can show a way to place limits on the use of resources in order to avoid the degradation of such resources. The CDM can give rise to two different markets: First, a market of Certified Emission Reductions –homogenous emission reductions that are standard in their effect on global warming and certified in their quality—and second, a market for investment in projects that anticipate the creation of CERs. Associated with both types of markets are supporting secondary markets that facilitate investments and risk management (Larson: 2001).

The value of the emission reductions relies on a solid framework of rules that are acceptable for all affected parties on the intergovernmental and all participants in CDM projects on the project level. Rules that leave doubts about the environmental benefits of the projects or lead to outcomes that are considered unfair will undermined the rationale for the CDM and ultimately erode support for the broader climate change agreement. As set out above, it is in the responsibility of governments to develop such a regulatory system that makes the mechanism work.

On the level of the individual projects, CDM host countries need to support projects through approval. The country must confirm that its participation in the CDM is voluntary and that the project assists the host country in achieving sustainable development. Host countries may also actively be part of a CDM project as seller of emission reductions, as project sponsor, or project operators. On the other side, Annex I countries and private sector entities will figure as investors in projects or/and as buyers of CERs. From the idea of joint implementation it follows that private entities should even carry out the majority of CDM project activities. According to Article 12 para. 9 of the Kyoto Protocol, a part from public entities, legal entities involved in the acquisition of emission reductions might include private sector entities in carbon offset importing and exporting countries as well as 'third party' entities such as international organisations. However, the role, function and responsibilities of the private entities are not ruled out in the text of the Protocol and have to be clarified. Parties in Annex I countries have to establish the obligations and rights of such private entities under their respective national law. Although such national legislations are still under development, the CDM already has attracted the interest of the private sector in industrialised and developing countries alike. There are three basic reasons why the private sector is motivated to participate in activities related to the CDM. First, in order to achieve their emission reductions commitments under the Kyoto Protocol, national governments will need to allocate rights to emit greenhouse gases among the current and future sources of emissions in their own countries, most of which will be in the private sector. As a consequence, the private sector will be required to achieve reductions and if allowed to do so, may choose to meet some of its obligations by carrying out clean development projects. Second, private sector entities may be motivated to participate in project activities in order to make a profit, or they are engaged in lines of business which are related to emission reduction activities, such as technology development, power generation, contract negotiations, broker and trader. Third, private sector entities of host countries might see the possibility of generating and selling greenhouse gas emission reductions under the CDM as means of making a difference in the internal rate of return and of pushing marginal projects into the realm of economic viability. The CERs arising from a CDM project will have cash value which can make a project viable from the project sponsor's point of view.

Even though Article 12 does not recognise any specific role to civil society and environmental groups in the CDM, the guidelines implementing the Kyoto Protocol also contain rules for stakeholder and civil society participation. In order to reach and ensure the integrity and acceptability of the project mechanisms, NGOs represented through CAN had advocated from the beginning of the negotiations on the Kyoto mechanisms for a transparent and participatory JI and CDM.

When it comes to project implementation, NGO participation is critical in helping to ensure that (i) the dual objectives of sustainable development in non-Annex I countries and additional emission reductions are achieved, and that (ii) non-Annex I countries have the capacity to request technology and projects which help them to achieve their sustainable development goals. Through roots in the local community, NGOs can mobilise stakeholder's participation; they often also have specific knowledge that helps to prioritise CDM mitigation options, capacity building activities and policy measures, and to minimise the negative impacts of projects when citizens and NGOs with expertise in different project types have opportunities to influence project design and sustainability. NGOs tap local knowledge, and enhance benefits flowing to local communities by enabling project developers to better recognise community needs. In the end, an

effective and active NGO involvement in project design and implementation reduces the financial risks of a project by achieving local public support and avoiding costly political opposition.

On the other hand, NGO claims often add to the complexity of the CDM project cycle. Experience shows that a too complex project cycle can seriously hamper participation especially of the private sector in projects. It is therefore the responsibility of the governments represented in the CoP/MoP and the experts sitting on the Executive Board to strike the right balance between transparency and participation, effectiveness and financial viability. Policy makers have to bear in mind the overall goal of implementing a at the same time credible and successful mechanism.

The prototype carbon fund: Mobilising new resources for sustainable development

The Prototype Carbon Fund ("PCF") was created on July 20, 1999 by a Resolution of the Executive Directors of the World Bank as a multi-donor trust fund.[177] At its second closing on October 31, 2000, Canada, Finland, Japan, the Netherlands, Norway, and Sweden and 17 private sector entities had approved their participation in the PCF. Public sector participants contributed US$ 10 million, private sector participants US$ 5 million to the Fund, bringing the size of the fund together to US$ 145 million. The contributions from both companies and governments are used to purchase greenhouse gas emission reductions fully consistent with the Kyoto Protocol and the emerging framework for JI and CDM. The PCF provides financial resources through the purchase of emission reductions from projects which are intended to generate emission reductions in return for the right to have transferred to PCF contributors, or "participants" in the PCF, a pro rata share of the emission reductions, verified and certified in accordance with an "Emission Reductions Purchase Agreement" with the respective project sponsor. Through its legal agreements the PCF Trustee purchases on behalf of the PCF participants emission reductions while mitigating risks associated with the purchase of emission reductions.

The PCF is a private-public partnership[178] that aims to mobilise new and additional resources to address climate change and promote sustainable development. It is a response to the need to understand and test the process and procedures for creating a market in project-based emissions reductions under Article 6 and under Article 12 of the Kyoto Protocol. The objective of the fund is (i) to provide its participants with an opportunity to learn about CDM and JI projects before the Protocol has entered into force, to start even before the guidelines and modalities on how to implement such projects had been agreed on, and (ii) to help create a market for project-based carbon offsets under the Kyoto Protocol by demonstrating how CDM and JI can contribute to the sustainable development of developing countries and EITs. Through the implementation of projects the Fund aims to demonstrate that investments under the project based mechanisms can earn export revenue for developing countries and EITs, and increase the profitability of cleaner, more efficient technology in energy, industry, and transport sectors.

Subject to general guidance from the participants and agreed upon project selection criteria, the World Bank as the trustee of the PCF is responsible for managing the day-to-day operations of the fund. It does so through the Fund Management Unit headed by the Fund Manager and the Fund Management Committee which consists of representatives of the Bank's management. PCF participants meet annually; at the Participants' Meeting, where they review and approve the annual budget of the Fund and elect the seven members of the Participants' Committee. This Committee provides general advise on issues regarding the operations of the fund, advises the Trustee on the extent to which the project agreements negotiated accord with the project selection criteria established in the ruling Instrument,[179] and reviews each project. Countries hosting PCF projects are represented in the Host Country Committee which provides advice to the PCF Management Unit from the perspective of the hosts of PCF projects. They also receive technical assistance in preparing to participate in CDM and JI. Non-governmental experts are represented in a Technical Advisory Group (TAG) for the PCF. TAG members meet annually to provide project specific and general feedback to PCF operations. They also have access to project specific information and are invited to cooperate with the PCF management team to ensure the best quality of the project portfolio and individual projects. They are selected from a list presented by the co-ordinator of NGOs working under the umbrella of CAN to the fund manager.

The PCF represents the World Bank's attempt to

[177] Resolution 99-1 authorizing the establishment of the Prototype Carbon Fund (PCF), approved by the Executive Directors of the International Bank for Reconstruction and Development (IBRD).

[178] The PCF does not create a legal partnership among PCF participants.

[179] International Bank for Reconstruction and Development, Instrument Establishing the Prototype Carbon Fund.

operationalise the CDM and JI into an international carbon market which facilitates the transfer of emission reductions (Freestone: 2001). The PCF can be compared to a policy network which at the same time is a institutionalised learning experience and an implementing mechanism. The establishment of the PCF was triggered by the desire of public and private actors to gain experience in order to develop a carbon market and to gain an advantage on potential competitors. The World Bank took the leadership in setting up a fund that would benefit its client countries by creating a new source of income. This common interest made the mobilisation of the necessary funds possible.

The fund shows how insights and experience from both, the public and the private sector, can be pooled to address global environmental concerns through the marketplace. Public sector participants in the PCF are involved in the fund to benefit from an opportunity to "learn by doing" from PCF projects as they themselves still deliberate on the rules, regulations and procedures which will govern such emission reduction projects under the framework of the UNFCCC/Kyoto Protocol. At the same time, governments are interested in the emission reductions generated by the projects to comply with their obligations under the Kyoto Protocol.

Private sector participants seek to reduce or counter the negative impact of carbon restrictions on their companies through investments in CDM and JI projects. Instead of relying on bilateral transactions to gain emission reductions from project related activities—transactions that require expertise and knowledge and expose a single company without a widespread project portfolio to considerable risks of failure—they have decided that the purchase of emission reductions through a multilateral fund reduces risks as such a fund spreads the risk to gain credible emission reductions among a group of buyers and a well balanced project portfolio. Participating in such a 'buyers club' is an alternative especially for smaller companies or for companies that seek to gain knowledge in the early market.

PCF participants also want to benefit from being 'early movers' in the emerging market and are seeking strategic positioning. Since the allocation of national emission reduction targets will impact internal investment decision making and external valuation, developing and projecting an efficient response on these emerging constraints will become an issue of strategic competitiveness. Ultimately, PCF participants want to learn about carbon transaction in order to influence national policy-making as long as the rules are not yet set.

For host country beneficiaries, both governments and the local private sector, mobilising financial resources through the PCF can have an impact on project viability by providing an additional stream of cash flows, which can improve the access to both public and private financing. Knowledge gained in completing the first sale of emissions reductions sheds light on the export revenue opportunities, but also on the gaps in local laws, rules, and administrative capacity to implement the Kyoto Protocol and facilitate CDM or JI transactions.

Last but not least, environmental NGOs play an important role in developing and implementing PCF projects. PCF experience so far demonstrates that the development of an effective emission reductions markets depends crucial on capacity building. NGOs have proven to be very important partners in rising general awareness and in providing a platform for knowledge dissemination. Local NGOs often cooperate with the PCF in implementing PCF projects and provide on the ground knowledge to the Management Unit. In countries with a strong and active civil society, local NGOs even take the lead over the private sector and developed and put forward their own projects.

The broad range of actors that cooperate and play an active role in the success of the operations of the PCF, ranging from public and private participants to host country officials, from private entities in host countries to private verifiers and NGOs, are crucial for the Fund's success. The PCF structure tries to integrate all interests and players and give them a role, and only when all these actors play an integral role in making the PCF work, in applying and revising its rules, and in broadening its impact, the PCF can design and implement successful projects.

As a learning network the PCF is created for a limited life span only: the fund wraps up its business in 2012. By then an evaluation of the experience can make an adaptation of the model to the actual situation possible. The PCF is created to remain flexible and to be able to learn. It is governed by a Instrument which sets basic rules for governance and operations. Instrument and project agreements still leave the room for a flexible approach crucial for operations in a changing environment.

The PCF seeks to combine the market ease of a flexible trade in commodity-like emission reductions with the tangible project benefits of project finance. The Fund is designed to provide benefits to industrialised as well as developing countries, to help private sector entities to achieve imposed or internal emis-

sion reductions goals, to foster investments in developing countries and promote sustainable development for local communities while improving the environment. Although this overall objective might be ambitious, the PCF shows how public and private actors can cooperate successfully in implementing projects under an international agreement.

Lessons learned

Even in its very premature status, the CDM offers an opportunity to new partnership models and opens the door for new forms of co-operation among different actors. It shares the responsibly for a clean environment and sustainable development in a sense that it relies upon market mechanisms and its attendant effects between all involved—public and private—actors. Where governments are unable to solve problems through traditional command and control approaches and have to draw on private forces, market mechanisms like the CDM promote a shift in responsibilities. If designed carefully and well implemented, the CDM can pull on markets and provide the economic incentives to promote self-sustaining sustainable development.

International organisations, such as the World Bank, can play an important role in implementing the CDM in bringing different actors together and making participation in sustainable development accessible to the private companies. International Organisations can serve as a broker between buyers and sellers of certified emission reductions, assist developing countries in CDM project development and aid potential buyers in identifying projects and groups of projects of interest to them. In a world of globalisation and interdependence, increased demand from civil society groups and the rise of influence of corporations and international markets, international organisations can redefine their roles in helping to manage global public goods and in promoting sustainable development.

With launching the PCF, the World Bank made the step from debate to action. It created a learning network which tries to implement the political agreement reached in Kyoto, Bonn, and Marrakesh. It translates international obligations into Emission Reduction Purchase Agreements. Challenges that the PCF has to confront is to maintain an efficient project cycle while accommodating accountability and transparency requirements as well as complying with the World Bank project cycle and safeguard policies. At the same time, in order to address concerns of civil society groups, environmental quality controls will be crucial for the integrity of CDM projects. But still, the PCF shows how partnership and shared interest between all participating parties can foster the co-operation between private and public sectors and can help to implement successfully projects. Because of the special features of JI and CDM, drawing on markets and private activities, the PCF could be established even before the Kyoto Protocol has entered into force, and therefore before any of its parties is bound by its obligations. In times, where the implementation deficit of international agreements is one of the most pressing problems in the realm of international environmental law, such early activity should be interpreted as a promising sign and a result of a new and innovative mechanism.

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Part V

The Nation State in Regional Integration Organisations: The Experience of the European Union

Transition of Lithuanian Environmental Policy: the Way Towards Sustainability?

by Ruta Bubniene and Audrone Alijošiute***

In 1990 Lithuania has regained the independence after 50 years of Soviet occupation.[180] The Soviet system has left a footprint in all spheres of life. Environmental policy and management was influenced by centrally planned economy as well. The economic and political transformation in Lithuania has changed the context by which environmental concerns are addressed. Environmental policy is a major challenge that confronts the limited institutional capacity of the ruling administration. Though democratisation of the political system is obvious, this development trend has made environmental management more complex. The changes brought the challenge to all levels of governance, particularly to local authorities, since the principle of subsidiary is a significant prerequisite in achieving improvement in the effort to manage environmental problems.

In 1995 Lithuania entered into Association Agreement with the European Union and applied for EU membership. Lithuania is one of the EU associate members that are currently preparing for accession. More than a half of negotiation chapters are closed as for November 2001. It is expected that Lithuania would be ready for accession by the end of 2003. Following the Association agreement, Lithuania shall bring its national laws and regulations into compliance with EU requirements. Progress in the areas of political, economic and administrative membership criteria is an essential pre-condition for the accession to the EU.

A very important task for each responsible institution is the balancing of approximation against other national priorities. The implementation of the accession priorities helps to direct the environmental protection development towards sustainability. Although the capacities and activities towards sustainable development are progressing at all levels, concept and trends of sustainable development has not become a central topic in the political debates in Lithuania.

Current Lithuanian environmental policy

The environmental quality, generally, is satisfactory in Lithuania in comparison with many other countries. Most pollution indices have improved since 1990, thought in many fields of environmental management Lithuania had to cope with the heritage of the soviet regime. Firstly, that was the centralised environmental management system and planned economy approach applied. Thus, the primary tasks for the government of Lithuania were the establishment of legal framework and decentralisation of administrative system. Besides the deficiencies, there were some specific sectoral problems such as insufficient waste water treatment, illegal or improper managed dumping sites, contaminated sites as well as risky Ignalina Nuclear Power Plant that have been under consideration since 1990.

In recent years atmospheric pollution in Lithuania, mainly due to economic recession, has been much lower than at the very beginning of nineties. However, the pollution from mobile sources is continuously increasing. The main problem related to water quality is pollution of rivers with organic substances and nutrients from urbanised areas. Waste generation has not differed much in recent years. Household waste generation per person is in the European range. Domestic and other non-hazardous wastes were traditionally dumped into unfit municipal dumping sites, the system of waste management and health standards was incomplete, and therefore, a low-cultured attitude with regard to waste disposal prevailed.

The percentage of protected areas in the total territory is very high in Lithuania (11.2%). There are a large number of natural and semi-natural territories with habitats for many plants, animals and fungi species which have long since become extinct in the World. Lithuania's success in preserving its natural heritage and its efforts to ensure a sustainable level of economic development are important assets for all Europe.

The institutionalisation of environmental policy in Lithuania is a phenomenon of the 1960s and 1970s. In the beginning of 1990's after regaining independ-

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ence considerable changes took place. In 1990s, environmental policy focused on several earlier neglected areas which demanded priority: reorganisation of environmental legislation, review of environmental standards, creation of an effective environmental impact assessment, introduction of economic incentives, improvement of monitoring systems, establishing an environmental education system and increasing co-operation with global and regional organisations.

It resulted in Lithuania's Environmental Protection Program of 1992, which included all major environmental problems of the day highlighting ways of addressing them in priority order. Due to the rapid national economy development and restructuring, and the urgency to address some environmental problems the need to set new goals arose and the Lithuanian Environmental Protection Strategy was approved by the Lithuanian Parliament in 1996. It aims "at preconditioning the country's sustainable development to allow the preservation of clean and healthy natural environment, biological and landscape diversity and optimal nature use." Although the Lithuanian Environmental Strategy stresses that a rational use of natural resources must be ensured, the document does not incorporate entire meaning of sustainable development as a prudent use and protection of the natural resources, economic prosperity and a balanced social development neither gives any basis for institutionalisation and future activities in respect of sustainable development. Nevertheless these priorities coincide with the requirements of the EU which are incorporated into the overall Lithuanian environmental policy implementation framework.

The EU context

The EU accession brings a number of new elements into Lithuanian environmental policy, including a new emphasis on controls over products (such as bans on certain chemicals, controls over batteries), more stringent waste management requirements, new approaches in industrial pollution prevention and protected areas, biodiversity.

The main document, reflecting future actions related to the *acquis* implementation is the National Program for the Adoption of the *Acquis*, where the description of sectoral policies is supplemented by plans of measures for the implementation of sectoral priorities. The other important strategic document is Environmental Approximation Strategy (1998), where transposition priorities are defined, a plan for meeting EU requirements in the environment sector is set, the implementation costs are evaluated and the need to reinforce the institutional infrastructure is identified. More detailed individual programmes have been completed later for the water, chemicals, noise, mobile sources and some other sectors.

Accession negotiations for environmental chapter lasted for less than a year and were closed in June 2001. Three transition periods were determined that referred to a possibility to postpone the implementation of the requirements until 2010 the latest of three directives related to urban water treatment, control of volatile organic compounds and to waste and packaging waste. The actions, which need to be taken to achieve full compliance with the EU requirements, can be broken down into the following groups: Completion of the formation of the necessary legal system, reinforcement of institutional capacities, and development of investment programmes and promotion of investments. Thus the national strategic documents concluded that despite the transposition and implementation, the financing of the implementation of environmental requirements is one of acute problems.

In terms of total current expenditure for environment as a percentage of GDP, environmental expenditure in Lithuania is quite similar to percentages observed in most CEE and OECD countries (approximately 1%). However, in comparison to OECD countries, Lithuania spends only a small fraction of the amounts spent in OECD countries due to the large differences in GDP. Thus, accession to the EU process will force Lithuania to increase expenditure for the environment. It is estimated that cumulative investments for the implementation of the main EU requirements in Lithuania could reach almost 0.4 billion EUR, or 55 million EUR each year in coming 15 years. The investments would be distributed as follows: 50% of pre-accession funds, 20% of state budget, 30% of loans.

Thus, accession negotiations are a challenge to maximise the positive impact and prevent negative impacts. The positive impacts lie in improved environmental management in accession countries and an overall improvement of Europe's environment. Negative potential is to the increased pressure upon biodiversity, the accelerated growth of road transport, the transformation of agriculture, the growth of unsustainable consumption patterns. The recently completed study on the benefits to the candidate countries from the EU accession concludes that candidate countries would receive health benefits, resource benefits, and ecosystem benefits as well as increased economic efficiency and higher productivity for companies.

To sum up, it is obvious that in order to comply with Environmental acquis, Lithuania should take severe institutional, legislative and technical actions which would require certain financing. Sustainable use of natural resources is emphasis throughout the national policy papers; however, deeper insight is needed.

Sustainability aspects

The Rio Declaration and the global Agenda 21, adopted in 1992, was signed by Lithuanian government. However promotion activities in comparison with for instance Scandinavian countries took place at governmental and local level rather late. Although sustainable development comprises three pillars: social, economic and environmental—in many cases the initiatives arise from environmental sector what thwarts the realisation of inter-sectoral goals.

All sectors of society must change towards sustainable development that could emanate from the citizens or from the government. It is believed that the best results could be achieved if the dialogue about the needed measures, consumption patterns and behaviour is held at local level. Therefore it is of great value that the municipalities and local communities participate in the promotion of sustainable development. However, political decisions on the strategic issues and promotion measures should be taken at governmental level.

AT GOVERNMENTAL LEVEL

There were several initiatives in 1998 and 1999 on establishment of a national body for the sustainable development though only in 2000 the Governmental Commission on Sustainable Development was set involving the top level officials of the Government, scientific institutions and NGOs. Furthermore, the first national report in occasion of National assessment on sustainable development for the World Summit on Sustainable Development in 2002 will be elaborated in spring 2002. This document will contain the assessment of the progress in social, economic and environmental development and also deliver a cross sectoral analysis. The assessment should serve as a basis for the preparation of the National Sustainable Development Strategy.

Moreover, the need to create preconditions for sustainable development and integration of environmental aspects into other policies is stated in the Governmental Program for 2001—2004. The integration process needs to be supported by effective environmental assessment of new policy proposals and further development of indicators to measure the progress. Until now, only some incentives were made (preparatory work for Strategic Environmental Assessment) towards implementation of this goal and much more efforts are needed for the actual implementation. Moreover, the resent documents as for instance the Long-term Strategy for Economic Development of Lithuania (2001-2015) incorporates aspects of sustainable development and necessity of cross-sectoral integration.

In 1996, the Heads of Government of the Baltic Sea Region and the Ministers of Foreign Affairs of the Baltic Sea Region (BSR) agreed to draw up an Agenda 21 for the BSR—Baltic 21—with a view to achieving sustainable development in the region. The emphasis of Baltic 21 is on regional co-operation and on the environment and its bearing on economic and social aspects of sustainable development. For each sector (the eight sectors are Agriculture, *Energy*, *Fisheries*, *Forestry*, *Industry*, *Tourism*, *Transport and Education)* goals and scenarios for sustainable development have been elaborated, as well as action programmes.

Lithuania is actively taking part and contributing towards implementation of Baltic 21. A progress is made in social sectors, particular in sustainable education as the Agenda 21 for education (in May 2000 the Ministers of Education have signed the Hague declaration for Education for Sustainable Development) was prepared for the Baltic Sea Region that would be followed by a National strategy for sustainable education. Those are important steps as education, training and research are important horizontal tools for attaining sustainable development and for the integration of environmental considerations in all sectors. Thus, there are several actions at governmental level towards promotion of sustainable development; however, more comprehensible steps are needed.

AT LOCAL LEVEL

Local Agenda 21 (LA 21) is a tool for local authorities to achieve sustainable development and can be defined as any participatory, local effort to establish a comprehensive action strategy for sustainable development. In the 1990's, certain responsibilities for the environmental protection were delegated to municipalities. Firstly, institutional reform established Environmental protection units in bigger cities and environmental positions in smaller municipalities. Although, in practice a lot of environmental management functions were delegated to municipalities, both the capacity and political weight of those were low, the adequate implementation mechanisms and empowerments were not established. Nevertheless many initiatives have arisen from the local environmental

sector.

Local Agenda 21 activities in the biggest Lithuanian municipalities (Kaunas, Klaipeda, and Panevezys) have been developed since 1998 in co-operation with the twin cities in the EU Member states. Lately smaller municipalities also expressed a preference for external support in their local environmental initiatives due to the lack of human and financial resources. In 2000—2001, twelve small and medium sized municipalities initiated Local Agenda 21 process and creating local action plans for sustainable development. Even larger number of the municipalities expressed there interest to promote sustainability at local level. Main drivers for Local Agenda 21 activities in Lithuanian municipalities could be named as the growing interest in LA 21 in Europe and the Baltic Sea Region and the EU approximation process, were municipalities play crucial role, need for innovative instruments in order to tackle complex environmental problems in the local communities.

Main obstacles of the promotion of sustainable development at local level are as follows: lack of knowledge in sustainable development concept and Local Agenda 21 in municipalities and society, low capacity of municipal officials, absence of implementation guidance, absence or few public participation traditions, absence of few experience and traditions in strategic planning, lack of tangible short-term results that could encourage politicians to join LA21, lack of political support from national level.

As the practice in Lithuania has shown, LA 21 is a potential tool for integration of environment into other sectors. LA 21, identifies inter-sectoral problems, needs and development perspectives, encourages awareness rising and public participation, facilitates the co-operation among the departments in the municipality and promotes the partnership with the stakeholders.

Conclusions

Significant progress towards the improvement of environmental management is made in Lithuania during the recent decade. Decentralisation of functions, application of new principals, economic instruments and incentives as well as recession of the economy led to the better quality of environment. Nowadays the main goal of the Lithuanian Environmental policy is the accession to the EU and compliance with the environmental acquis, where implementation of the obligations is crucial.

There are certain initiatives at governmental level to promote sustainable development; however, they are not sufficient to ensure tangible results. Establishment of the Governmental Commission for Sustainable Development and assessment of sustainable development progress over the 10 years are the progressive decisions that might lead to the development of National Sustainable Development Strategy, although there is a lack of promotion activities in the field. Thus, the reaffirmation of the commitment to the concepts of sustainable development is required and could encourage the process.

At local level the interest in LA21 is increasing. Now there are more than 25% of local authorities involved or indicated the interest in LA21 activities in Lithuania. The main problems foreseen at local level is the lack of consultations and co-operation among the stakeholders as well as the shortage of guidance and partnership. Despite the late start, Lithuanian local authorities are frontrunners in the field of sustainable development, bearing in mind that there is no national guidance or any promotional campaigns.

Thus there is more bottom-up initiatives rather than top-down in Lithuania regarding sustainable development. National political and methodological support for all municipalities to prepare an LA21 plan would be of utmost importance. Integration of environment into the other sectors is a relatively new paradigm, thus could be found only in a few national policy papers however the resent documents as for instance the Long term Strategy for Economical Development of Lithuania (2001-2015) incorporates the principles of sustainable development and necessity of cross -sectoral integration. In general the relations between social and environmental sectors are weak; however, the educational sector is the most advanced in the way towards sustainability. Integration of environmental and economic sectors is still complicated and in major cases based upon the initiatives of certain companies. The development of strategic environmental assessment legislation could provide an integrated approach towards new plans and policies.

To conclude, it is crucial to include the sustainable development on national political agenda, to promote local actions, awareness raising and designing of effective tool kit for different interest groups. In such a way Lithuania can contribute to the sustainable development at global level and solve the environmental problems in more innovative and efficient way.

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EU Water Policy and Implementation of Water Management Regimes on Transboundary Waters in the Baltic Sea Basin

by Gulnara Roll and Evelin Lopman***

It is often assumed that a larger number of conventions and other legal instruments, rules and procedures addressing a specific environmental issue in a specific region result in more effective and quicker solutions of the environmental problems through creation of "synergetic compliance system(s) at the regional level" (Jagusiewicz, 1999).[181] At the same time, as the practice of managing regional environmental problems shows, co-ordination of these different arrangements and interests of multiple actors involved is a resource consuming and difficult process; and often it does not achieve initially established co-ordination goals.

In the Baltic Sea Region, preserving a good water quality is critical for the development of the region. One of the major challenges in the region is development of effective co-operative arrangements for management of transboundary waters inflowing into the Baltic Sea. Participants of the International Round Table "Transboundary Water Management in the Baltic Sea Region" (June 1999, Vilnius, Lithuania) stressed that

> significant challenges remain in the management of transboundary waters—rivers, lakes, wetlands and coastal lagoons—in the eastern and southern portions of the Baltic Sea Region… They are particularly important since they include rivers draining large areas with diverse land uses that contribute to pollution of coastal lagoons and the Baltic Sea itself. In many cases transboundary rivers and lakes are the primary sources for domestic, agricultural and industrial water supplies and are critical for maintenance of aquatic ecosystems" (Vilnius Recommendations, 1999).

The Round Table participants recognised that there is a number of co-operating partners on different levels responsible for management of transboundary waters in the Baltic Sea Basin and called for a more "proactive role" of a regional Helsinki Commission (HELCOM) in co-ordination of different activities of the co-operating partners aimed at sustainable use and protection of transboundary waters in the Baltic Sea Basin. The Round Table formulated recommendations for a more effective co-ordination of institutional arrangements for management of transboundary waters. It was specifically recommended that transboundary water "*management bodies should be streamlined as much as possible at all levels…. The participation of outside parties should be at the invitation of the co-operating parties and reflect their priorities and interests*" (Vilnius Recommendations, 1999).

However, already in two years after the Round Table, it became clear that HELCOM was not ready to accept the invitation to take the responsibility for co-ordination of multiple arrangements for management of transboundary waters in the basin; and instead of the streamlined management and co-ordination, today we observe a growing number of institutions and networks involved in managing transboundary waters in the Baltic Sea Area. Activities of these institutional networks are not co-ordinated but most of them are politically and functionally interlinked.

The issue of co-ordination of institutional arrangements for water management in the Baltic Sea Basin came again into the centre of discussions among politicians and water managers after the entrance into force of the Directive in 2000 (further Water Directive). In the Baltic Sea Basin currently there are three EU member states—Denmark, Sweden and Finland; a large number of the EU accession states that are likely to become the EU members by a year of 2004 or 2005: Estonia, Latvia, Lithuania, Poland, Czech Republic; and there are three non-EU states that are Norway, Russia and Belarus where in overall contribution from Belarus and Norway to pollution load to the Baltic Sea is very small. In a few years after accession of the three Baltic Sates, Czech Republic and Poland into the EU, most of the Baltic Sea basin will be within the European Union territory.

Implementation of the Water Framework Directive is based on the development of strong institutional arrangements—the Directive has many rules and procedures that EU member states have to comply with; reporting on implementation of the Directive is quite extensive. The European Commission can submit a complain to the European Court and if a member state does not comply with the EU policies; in the cases of non-compliance member states can be charges with high fines or may loose funds that they receive from the Commission from specialised regional development and other funds. Institutional

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> "strength is a measure of the extent and stringency of an institution's rules and procedures or, in other words, the extent to which the institution requires subjects to alter or adapt their behaviour to conform to its requirements" (Young, forthcoming).

With entering into force of the Water Framework Directive, it is essential to understand a dynamics of the interplay between different water management regimes in the Baltic Sea Region that would allow to move forward consciously with changes in the transboundary water co-operation structures in the Baltic Sea Basin.

The article attempts to answer the following questions connected with the issue of co-ordination of water management regimes on transboundary waters within the Baltic Sea Basin: Which of the water management regimes functioning in the Baltic Sea Area, deal with the management of transboundary waters and what are the boundaries of these regimes? How these regimes are co-ordinated between each other: what vertical and horizontal interactions exist between these regimes? What changes in the institutional arrangements for management of transboundary waters in the Baltic Sea Basin can be expected with the further process of implementation of the Water Framework Directive of the EU?

Methodology for the analysis

Like ecosystems, individual institutions are often linked together through various types of interdependencies (Commoner, 1972). For the analysis of the *institutional interplay,* we use approaches developed within the "new institutionalism" school of thought that defines institutions as "*constellations of rights, rules, and relationships that define social practices and guide interactions among those who participate in them" (*Young and Underdal, 1997). There are horizontal as well as vertical interactions between the institutions. According to Oran R. Young (Young, forthcoming)

> "horizontal interplay involves interactions occurring at the same level of social organisation; vertical interplay is a result of cross-scale interactions or links involving institutions located on different levels of social organisation. … The resultant interplay between or among institutions may take the form of functional interdependencies or arise as a consequence of the politics of institutional design and management."

According to Young and Underdal (1997), institutions can respond to institutional interplay or overlap through "unilateral" adjustments or adaptation of one institution to another, or "mutual" adjustment in which two or more institutions are designed to work together in order to optimise *joint* effectiveness, muster political support, or achieve some other purpose that neither can accomplish on its own".

Water management regimes on transboundary waters in the Baltic Sea Basin

Economic development in the Baltic Sea region—fisheries, water transport, industry, tourism, and other economic activities—require good water quality in the Baltic Sea basin. The Baltic Sea constitutes a sensitive ecosystem with a very long water retention time where water eutrophication is a key environmental problem (Dissing, 2001). Governments of the Baltic Sea states and other actors in the region created a number of international water regimes that address issues of water quality and quantity in the Baltic Sea Basin.

HELCOM

All the Baltic Sea states signed Convention on the Protection of the Marine Environment of the Baltic Sea Area (1992). This Convention applies to protection of the marine environment of the Baltic Sea Area, including its internal waters. The Contracting Parties have established Helsinki Commission (HELCOM) that co-ordinated national implementation of Convention. HELCOM is an only Baltic Sea Region-wide institution that deals with water protection; and protection and sustainable use of transboundary waters in the basin are included in the fields of its activities. It is a strong institution for protection of the marine environment with developed rules and procedures and an experts network. It seems logic that the HELCOM could be an institution to provide information exchange and co-ordination of water protection activities on the transboundary waters in the Baltic Sea Basin. However, HELCOM traditionally was focused on addressing environmental problems of the marine environment; attempts at the end of the 1990s to reform the HELCOM did not result in a more proactive approach towards management of transboundary waters in the Baltic sea Basin. Up to now HELCOM remained to be track-dependent on its traditional activities. Therefore, we can expect that the HELCOM will not play a proactive role in strengthening of transboundary water management institutions in the Baltic Sea Basin. Still HELCOM plays an important role in the social learning and capacity building of the transboundary water co-operation institutions as it provides an arena for learning and exchange of experiences for experts involved in the work of the HELCOM in the riparian countries sharing transboundary waters in the Baltic Sea Area.

UN ECE

The Baltic Sea states are signatories to the Convention of the Protection and Use of Transboundary Watercourses and International Lakes (1992) that is intended to strengthen national measures for the protection and ecologically sound management of transboundary surface waters and groundwaters. The UN ECE region is large—it includes most of Europe, Russia, and all the New Independent States. The Convention obliges Parties to prevent, control, and reduce water pollution from point and non-point sources. It also includes provisions for monitoring, research and development, consultations, warning and alarm systems, mutual assistance, institutional arrangements, and the exchange and protection of information, as well as public access to information. The Convention Secretariat is located at the UN Economic Commission for Europe, Geneva, Switzerland.

The ECE legal environmental framework that is applied to management of transboundary waters in the Baltic Sea Basin includes three more treaties addressing licensing procedures for polluting activities with transboundary effects (Convention on Environmental Impact Assessment in a Transboundary Context-the EIA Convention), transboundary effects of industrial accidents (Convention on Transboundary Effects of Industrial Accidents-the Accident Convention) and access to information and justice and public participation in decision-making (Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters—the Aarhus Convention).

According to Jagusiewicz (1999), implementation of the UN ECE Transboundary Water Convention is well co-ordinated with implementation of the other three UN ECE conventions. For example, the Water Convention demands the application of Environmental Impact Assessment (EIA) relating to appropriate international legislation in order to prevent, control, and reduce transboundary impact. In turn, the EIA Convention lists water-related activities with likely significant adverse transboundary impact. Thus, we can speak about one UN ECE conventions regime for management of transboundary waters in Europe where the leading role in these arrangements belong to the UN ECE Water Convention. The UN ECE conventions are lightly institutionalised—there are comparatively few rules and procedures established within the Convention and there are no liabilities for non-complying with the conventions' requirements. At the same time, the UN ECE water management regime is rather flexible and inclusive for involvement of stakeholders and NGOs. An International Water Assessment Centre (IWAC) was established under the UN ECE Water Convention that develops innovative approaches to management of transboundary waters in the UN ECE region and manages international projects. The IWAC is an important learning mechanism for the Water Convention. On the transboundary waters shared by the EU member states, the European Commission is a signatory to transboundary water agreements signed under the UN ECE Water Convention and through that and through a respective EU member states, the EU water policy is implemented. The lightly administrated and flexible UN ECE water management regime on the whole territory of the European Union and its fringes will be adjusted to the requirements of the EU water policy as the EU member and accession states will further proceed with implementation of the EU Water Framework Directive. An existence of a social learning mechanism under the UN ECE Water Convention will ensure that with the time this adjustment and modernisation of the institution will take place.

EU WATER FRAMEWORK DIRECTIVE

The EU Water Framework Directive that is the third major institutional framework for water management in the Baltic Sea Area, entered into force in December 2000. The purpose of this Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters, and groundwater in Europe. The central feature of the WFD is the development of integrated river basin management plans. These plans will be instrumental in ensuring the environmental objective of the WFD, "good water status," is achieved and maintained for all Community waters by 2015 (Elements of Good Practice, 2001). The Directive especially addresses the issue of transboundary water co-operation. On transboundary waters according to the WFD, the EU member states "should endeavour" to develop co-operation with neighbouring non-EU member states to prepare joint river basin management plans. A set of procedures for identifying that point for a given body of water, and establishing particular chemical or hydromorphological standards to achieve it, is provided, together with a system for ensuring that each Member State interprets the procedure in a consistent way (to ensure comparability) (Europe's basin blueprint, 2001). Water Directive obliges the Member states to establish competent authorities for the river basin management to ensure that the application of the rules of the directive is co-ordinated and overseen within each river basin district (Article 3). When international river basin district (river basin covers the

territory of more than one Member State) is established the Member States shall jointly ensure that appropriate administrative arrangements, including the designation of appropriate competent authorities, are established. Member States may designate existing national or international bodies as competent authorities for the purposes of this Directive. In such cases, they shall ensure that the resulting competent authorities have the powers and authority needed to meet the obligations imposed by this Directive.

The Water Framework Directive is a modern water management institution; being a strong institution, it was also designed to be flexible to incorporate requirements of other frameworks and instruments functionally connected to it (i.e., other conventions, laws dealing with water use and protection in Europe) in its implementation. This specifically can be demonstrated on the transboundary water management level in Europe where the European Commission becomes a signatory along with a EU member state to transboundary water management agreements signed in accord to the UN ECE Transboundary Water Convention and this way the EU ensures implementation of the Directive as well as promotes implementation of the specific transboundary water agreement.

BILATERAL AND MULTILATERAL AGREEMENTS ON TRANSBOUNDARY RIVERS

On transboundary rivers and international lakes in the Baltic Sea Basin, majority of the states sharing these transboundary waters signed bilateral and multilateral arrangements for managing their transboundary waters in accord to the UN ECE Transboundary Water Convention. These arrangements vary from one transboundary region to another.

Transboundary river basins—River Narva Basin, including Lake Peipsi/Chudskoe, shared by Estonia, Russia and Latvia; and River Odra Basin ("Oder" in German), between Poland, Czech Republic, Germany and Slovakia are shared by the EU member and/or EU accession states, the UN ECE conventions arrangements are co-ordinated with and are being adjusted to the stronger EU Water Directive rules and procedures. About 1 million people live in the drainage basin of Lake Peipsi. The main environmental issues in the Narva River and Lake Peipsi Basin are water eutrophication and management of fisheries in the lake. River Odra is an important economical and environmental resource in the region. Most significant industrial sectors in the region are mining; metal processing and power production, chemical and fertiliser industry, machine and paper industry, power production, and building materials industry. In the Odra River Basin agriculture is developed as the most fertile agricultural soils of the country are found in Wroclaw and middle Odra regions. There are also several nature protection areas in the Odra River valley, some of them are protected under Ramsar Convention, and some areas will be proposed as Natura 2000 areas for the future protection under EU Habitats Directive.

Most important problem areas in Odra river basin are water quality and flood protection. Flood management is one critically important aspect of water management: the flood looses in 1997 reached about 10 billion US dollars (Zybek, 2001). On the other hand, intensive use of the water in the basin has lead to a low water quality of Odra River. Odra is situated mostly in Poland; nevertheless the pollution shares of Czech and Germany are significant, which indicates that the problems cannot be solved by one state only.

AGREEMENTS FOR MANAGEMENT OF THE TRANSBOUNDARY WATER BODIES

River Narva Basin water management regime is regulated by Agreement between the Government of the Estonian Republic and the Government of Russian Federation on Co-operation in Protection and Sustainable Use of Transboundary Waters. Estonian-Russian intergovernmental agreement was concluded according to the UN/ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes. A joint transboundary water commission was established in 1997. Latvia has a separate protocol for co-operation with Russia in the Velikaya River Basin (a part of the Lake Peipsi Basin) and an agreement on transboundary water management with Estonia. In the river basin, there is also a fisheries management regime regulated by the bilateral fisheries agreement and established intergovernmental commission. There are subregional transboundary water co-operation arrangements between municipalities dealing with local development, tourism, and water transport on the Lake Peipsi.

After the agreement was signed and the Commission established, at the Commission first meeting, held in May 1998, the parties formed four working groups under the commission—water management working group; water protection working group; working group on monitoring and research; working group on co-operation between local authorities, population, international and non-governmental organisations; structure which is in accordance with the stakeholders involved into the preparation process. The structure of the commission ensures that all stakeholders can play active role in water management, as working groups involve people with different professions and

interests; therefore co-ordination within the water management sectors and with other sectors is facilitated.

The Commission meets annually. At its second meeting in 1999, the joint Commission decided to start preparations of a comprehensive water basin management programme that would be based on principles outlined in the EU Water Framework Directive. For implementation of the EU Water Directive in the Narva River Basin the preliminary steps in Estonia have been taken, Estonian Water Act has been harmonised with requirements of the EU; river basin management strategies for all basins in Estonia are to be elaborated by 2009. For Russia, implementation of the EU requirements is a matter of political will; and the Russian government representatives to the Commission confirmed that the Russian side would implement the EU water policy requirements in the Narva River Basin. The implementation will require to overcome differences in administrative structures and procedures, specific water management practices between Estonia and Russia, and that is the point where joint commission is a connecting link, an institution, which shall co-ordinate implementation of the Directive in the international basin and smooth the differences between the countries. How exactly implementation of the Water Framework Directive will take place in the transboundary water basin, it is not clear but at least there is a political commitment from the Russian side and there are at least two international projects supported by the EU TACIS Program and the Global Environment Facility that should start in 2002; the projects will support harmonised implementation of the Water Framework Directive in the whole Narva River and Lake Peipsi Basin.

Low water quality in River Odra was the main reason for the transboundary co-operation. Transboundary co-operation in Odra river basin is regulated by several international agreements. In 1958, Poland and Czech Republic have concluded an agreement between the Government of the Czechoslovak Republic and the Government of the Polish People Republic Concerning the Use of Water Resources in Frontier Waters. All states sharing Odra River have ratified the UN/ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes. All respective states plus European Union have also concluded multilateral Convention on the International Commission for the Protection of the Oder. The international commission was established in the basin to co-ordinate implementation of the Convention. Transboundary relations develop on wider grounds than water management, Poland and Germany have signed an Agreement on Regional and Cross-border Co-operation in 1991 and there is a successful co-operation on the subregional level is going on; Poland and Czech have Agreement on Transfrontier Co-operation, concluded in 1994.

Convention on the International Commission for the Protection of the Odra is a framework document for transboundary water management in Odra basin, concluded by Federal Republic of Germany, Republic of Poland, Czech Republic, and European Union. The Convention was signed and the Commission was set up in 1996; the Convention came into force in 1999. There are six working groups (WG) under the Commission. There are working groups for action plan. Underlying reasons for the co-operation were problems with water quality, though reasons for establishing the water management regime are different for different stakeholders as appears from interviews made in Wroclaw with a representative of the Odra Commission (Zubek, 2001). Co-operation was considered by Polish experts important for achieving co-ordination of water protection measures with neighbouring countries, and the commission—as a round table for sharing and analysing necessary data and information, which would lead to a better control of polluting activities in the water basin.

Since the creation of the commission quite a lot has been done considering that in water management the positive results appear in a longer period than 5 years. There have been programmes for pollution reduction under the WG 1; under the working group several wastewater treatment facilities were built along the Odra. According to the commission data, the quality of the river water has been raised greatly—amount of water out of classification has decreased and amount of class III and II water has increased. There is another important aspect, which has been dealt with in WG 2; environmental accident warning system creation was the main topic of that working group. Odra flows through industrially active areas; therefore there is possibility of industrial accidents or accidental pollution during floods.

Important stakeholders of water quality management regime in Odra river basin are tourism organisations, local governments, farmers, industry, and municipalities and environmental NGOs, though the involvement of the stakeholders into the work of the Commission is not institutionalised. Working group on WFD implementation was created in year 2000 with the support of the European Commission. Poland, as the main manager of Odra, has reformed its water management structures already and the water management is based on river basin districts, as the Water Directive requires. However, a number of other requirements of the Directive have not been fully im-

plemented on the Polish side. Germany as a EU member state has to implement the Water Directive in German part of the basin anyway.

Thus, the EU enlargement processes influences considerably the level and scope of the transboundary co-operation in the Narva and Odra River Basins. In the Odra River Basin, Poland and Czech are accession countries of the European Union. Accession process is very demanding from candidate countries, significant amount of legislation need to be elaborated and harmonised with European Union legal acts, Water Framework Directive included. However, before the official membership a candidate country is not obliged to implement the directive, though the success of the negotiations depends largely on it.

River Odra and Lake Peipsi water management regimes have similarities as well as differences; and the achievements in the two basins are rather diverse. The period of transboundary co-operation is the same in both basins; also the underlying reasons of co-operation are similar as one of the main driving forces is an incentive to improve the water quality. General political aims of most of the countries involved in managing the basins are analogous as well—accession to the European Union in near future. The River Commissions have been formed in both basins. The Joint Commissions are important institutions that should play a key role in co-ordinating implementation of the Water Framework Directive in the international basins through helping the riparian countries to smooth differences in administrative structures and procedures, specific water management practices and to develop joint systems for management of water quality in the respective river basins.

Conclusion

On transboundary waters in the Baltic Sea Basin, starting from 1992, two functionally linked water management regimes that existed—the HELCOM regime set up under the Helsinki Convention on Protection of Marine Environment in the Baltic Sea Area and the UN ECE Transboundary Water Convention regime. Both regimes were established to address specific issues in water management—respectively protection of the Baltic Sea marine environment and protection of transboundary waters in Europe. Within the Baltic Sea Basin, management of transboundary waters was not co-ordinated. Entrance into force of the EU Water Framework Directive in 2000 changes a picture of the institutional interplay. The EU Water Directive is a strong and on the other hand a modern water management institution that is based on principles of the modern concept of integrated water resource management. We expect that the Water Framework Directive will be a dominating institution also on transboundary waters in the Baltic Sea Region especially since majority of the states around the Baltic Sea are EU member and EU accession states. Other institutional frameworks in the region will be adjusted to the requirements of the EU Water Directive; however, mechanisms and extend of the adjustment will be different depending on nature of different regimes. This will depend on the strength and flexibility of those other regimes.

The institutional interplay is a two way process. Implementation of the Water Framework Directive is expected to be more successful due to the existence of the HELCOM regime in the Baltic Sea Area. The HELCOM regime serves as an arena for social learning and capacity building of the transboundary water co-operation institutions in the region.

The UN ECE Transboundary Water Convention regime does not contain detailed rules and procedures. On the transboundary waters shared by the EU member states, the European Commission is a signatory to transboundary water agreements signed under the UN ECE Water Convention. It can be expected that the lightly administrated and flexible UN ECE water management regime on the whole territory of the European Union and its fringes will be adjusted to the requirements of the EU water policy. An existence of a social learning mechanism under the UN ECE Water Convention will ensure that this adjustment of the institution will take place.

Finally, with the changes in the interplay of water management institutions in the Baltic Sea Basin, roles of different actors in transboundary water management is changing. This issue should be further discussed in future, as defining specific roles of actors in implementation of the described water management regimes will be crucial for development of specific recommendations for possible changes in the institutional arrangements for water management around the Baltic Sea. More intensive involvement of the local players in the water management will result in a more intensive political interplay of water management institutions in the Baltic Sea Region. Role of the nation states as key player in water management remains to be crucial; at the same time, there are more relationships in water management developed between the nation-states as actors with other actors in the region, especially with actors on the subregional level. Role of international organisations remains important in facilitating co-operation on the transboundary waters. In the Lake Peipsi Basin, assistance

from Danish, Swedish governments, UNDP, UN ECE and the European Commission played a critical role in facilitating a more effective transboundary water management regime implementation; in the Odra Basin, role of the European Commission in developing the working group for Water Framework Directive was important as well. Therefore, the political vertical interplay of water management institutions in the Baltic Sea Region should be further discussed.

Overall, the expected changes in the institutional arrangements for management of transboundary waters in the Baltic Sea Basin are positive. Earlier established arrangements for management of transboundary waters in Europe are weak and there are problems of low effectiveness and compliance. With adoption of the Water Framework Directive, stronger institutions are expected to be created that are more effective in terms of achieving a goal of "good water quality" on transboundary waters in the Baltic Sea Basin.

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Transforming Regulatory Systems: Multilevel Governance in a European Context

by Theo de Bruijn *

Ever since the publication of the report *Our common future* (World Commission on Environment and Development—Commission Brundtland, 1987) and the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, sustainable development has become the central perspective in national and international environmental strategies. Important changes in production and consumption systems are required in order to meet the needs and aspirations of a growing world population while using environmental resources in a sustainable manner (IHDP 1999). Instead of 'compliance to regulation' the challenge is to develop policy strategies through which industrial systems can be *transformed* into sustainable ones. Next to developing innovative policy programmes based on voluntary and collaborative approaches, systems of direct regulation have an important role to play, if strengthened. Doing so only in a national context has severe limitations. Environmental problems, their causes and possible solutions have strong international dimensions. Unilateral approaches are therefore quite meaningless and also come across the competitiveness of national industries. Obviously, transforming regulatory systems can therefore not be done by a single nation state in isolation. Collaboration at a higher level is a necessity. The European Union is one of the important arenas for this.

During the past decades, the importance of the European Union has grown so significantly that we now can speak of a new and unique system of multilevel governance in Europe (cf. Scharpf 1999). There is a frequent transfer of policy arrangements between the national and the European level, and vice versa. In this article we focus on how European legislation is incorporated in national policy systems. Although the international nature of many environmental problems and the vulnerability of competitiveness of industry lead to a clear need to integrate and coordinate national approaches at the European level (cf. Coleman 1990), we will show that the national context of policy-making proves to be more resistant to change than one would expect at first sight and the transfer of policy arrangements between different levels of governance is more complicated.

Theoretically, the article builds on historical and sociological strands of new institutionalism. A central concept that is used to account for the observed variance in national responses is 'goodness of fit' (cf. Knill and Lehmkuhl 1999; Börzel and Risse 2000; Cowles et al. 2001). The general expectation is that member states have a hard time coping with European developments if these do not match with domestic systems of policy-making. The analysis shows that this is especially the case when there is a misfit in institutional structure and/or policy style between the different levels. Empirically, the article reviews the implementation of the IPPC Directive. We report on the developments in Denmark, Germany, the Netherlands, Spain and the United Kingdom.

The set-up of the article is as follows. In section 2 we further introduce the multilevel character of policy-making in Europe. The IPPC directive is described in section 3, followed by a comparison of domestic responses in section 4. We end the article with some conclusions in section 5.

Multilevel governance in Europe: A neo-institutionalist perspective

The European Union was established by the Rome Treaty in 1957 (The Treaty for the foundation of the European Economic Union). In the years since the European Union has developed as a complex and unique institutional structure. It is important to note that the European Union is not a supranational institution. National actors and institutions play a significant role next to European institutions. The principle of subsidiarity states that the Community will take action only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale of effects of proposed action, be better achieved by the Community.

Thus, policymaking within the European Union is to a large extent a negotiating process between many actors at various levels. The main actors involved in the decision-making process are the Commission and the member states. The European Commission has the formal right of initiating legislation. The real

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power, however, lies at the national level. Through the Council of Ministers the member states make the final decision whether or not to adopt legislation and they give specific meaning to it during implementation. Member states have to face the challenge of implementing the outcomes of the negotiating process at the European level. European developments can be seen as a (small) innovation to the larger policy-system of member states. This implies not only changing legislation but also changing organisational structures, expertise, and working routines. This is not an easy job. Choices made previously limit the range of options. Change is possible but it takes a good deal of political pressure to produce that change. And the range of possibilities for that change is constrained by the institutional context.

This argument is derived from new institutional theory that tells us that change in general is difficult (cf. Peters 1999). There must be a strong driving force, since institutions develop robustness towards changes in their functional and normative environments, as well as towards reform attempts (Olsen 1997: 161). The attention for institutional analysis has been reintroduced in political science by March and Olsen in 1989 with their book "Rediscovering Institutions". Their work showed the importance of the societal context in which action takes place instead of a focus on the individual actor and his motives. Organisations develop what is called standard operating procedures (cf. Peters 1993)—learned responses of the organisation to certain problems. These standard operating procedures are important for organisations for they enable an efficient response. Without them the response would be slower and the organisation would likely be less effective. Therefore, once launched, policies and their implementation processes continue along on the same path until some sufficiently strong political force deflects them from it. The existing institutional context constrains the ability to change, in our case: to adapt to European developments. While it is necessary for an effective governance system that there is a smooth interplay between the European and national level the transfer of policy approaches from the European to the national level is complicated. Current domestic institutional contexts constrain responses to European developments. Although changes are hard to establish, institutions are capable of change. Possible mechanisms through which change can occur are through learning, by the power of new ideas (as developed through a new policy programme), external pressures, dysfunction of the original design, and critical junctures of (independent) political pressures (cf. Peters 1999). The European Union is one of the sources of factors setting these mechanisms in motion. The question is however whether the European Union is a strong enough source.

Given that policy-making at the European level is a give and take between the member states, one can expect that outcomes of specific negotiating processes (e.g. a directive) create 'winners' and 'losers'. Some member states may have been successful in 'uploading' their policy approach to the European level, while other ones may be faced with the task to 'download' foreign approaches. Thus, European legislation may fit better with certain national settings than with other ones. Domestic responses are likely to vary according to the goodness of fit (Olsen 1997: 177). In cases of a near match, European developments can be easily incorporated and complied with in the existing setting. Legislation that represents a more radical change has a much higher chance for failure. Such programmes imply that government agencies change their implementation practices and maybe take on new roles in their relationship with industry. So, path-breaking programmes will likely meet strong opposition from existing institutions (e.g. March and Olsen 1989) since the required change then completely counters existing ideas, working routines, existing structures, competencies, etc. Knill and Lenschow (2001) note, however, that not all adaptational pressures will meet strong resistance. They add the notion of the *institutional core* of national administrative traditions which they describe as "administrative structures and procedures that are embedded in the member state's respective state, legal, and political traditions" (2001: 124), and, elsewhere, as "general characteristics shaping administrative practices and structures within a country, which follow from the specific constellation of the macro-institutional context, including the state tradition, the legal system, as well as the political-administrative system" (2000: 258). Processes of Europeanisation (the incorporation of European legislation into domestic settings) that conflict with this core will meet strong resistance.

Understanding what constitutes this core, or what elements of national policy systems are most resistant to change is important for understanding the possibilities and limits to developing an effective European multilevel governance system. Institutions around environmental policies have different dimensions. European legislation may come in conflict with the existing content of policies (i.e. standards or instruments in use), with the existing institutional structure (i.e. legislative structure or organisation of implementation processes) or with the existing policy style. Policy styles are defined by Richardson (1982: 2) as

'systems of decision-making, different procedures for making societal decisions'. He further speaks of 'standard operating procedures' for the government's approach to problem solving and the relationship between the government and other actors in the policy process (idem: 13). He argues that national policy styles determine the range of options that is feasible to consider and describes a national style as 'the procedural ambition' of policy makers.

As said, Europeanisation can create adaptational pressures on all three dimensions. The question is whether these pressures meet the same opposition in cases of misfit. Van Waarden expects "the substance of regulations to be easier subject to harmonisation than the form and style by and the networks in which they are formulated and implemented" (1995: 364). Green Cowles and Risse (2001: 232) also find that "convergence is largely confined to policy [content] rather than to system-wide domestic structures". In other words, member states might easier overcome misfits concerning policy content then on structures and styles. The institutional core then refers mostly to structures and styles and less to policy content.

In sum, one would expect European programmes to be less successful when they do not relate closely to existing parts of domestic systems. In cases with an insufficient or improper institutional capacity and/or when there is a misfit with the dominant style in environmental policies, the chances for successful implementation are limited.

The IPPC directive

The European Union was set up as an economic entity by the Rome Treaty in 1957. The participating countries did not provide for a common environmental policy. In line with the growing attention for environmental affairs world-wide (e.g. the United Nations conference on the Human Environment in Stockholm 1972) the Heads of State or Government insisted that a common policy was needed in October 1972. This resulted in 1973 in the first Environmental Action Program. Since then we can speak of an environmental policy of the Union. Since the Rome Treaty did not mention the environment as a basis for common policy, during the first years the competence for environmental policy was based on some broad formulated articles of the treaty. Since the emergence of trade barriers due to divergent environmental standards in member states was being used to engage in environmental policies, it was a reactive process of agenda setting (Liefferink and Andersen 1997: 11). Therefore, most of the early legislation was meant to eliminate obstacles to free competition between member states (Sands 1991). The necessity of the link with economic development resulted in an ad-hoc development of environmental policy, trying to soften the external effects of economic growth. During the 1970s and 1980s, legislation in the form of directives was mainly concerned with setting limits on emissions of specific pollutants (Lévêque, 1996: 13). In twenty years time more than 200 measures were taken. In some fields successes were noticeable. However, by the mid-1980s, it was clear that broader and more integral strategies were needed. Regulations too often ended up in shifting pollution from one media to another rather than eliminating pollution. The Single European Act of 1987 gave the EU explicit competence for environmental policy. Since 1992 the concept of sustainability has also been added to the main aims of the Union (Treaty on European Union). Current European environmental policy takes an integrated approach at environmental problems. The 5th Environmental Action Program 5EAP ("Towards Sustainability" CEC, 1993) for instance follows a thematic approach with targets formulated for the short-, middle- en long-term, instead of focusing on problems in different environmental media separately. Out of the understanding that the ultimate goal of sustainable development can only be achieved by concerted action on the part of the relevant actors working together in partnership, 5EAP aims at a mixing of actors and instruments at the appropriate levels (CEC 1993: 113). In this respect 5EAP speaks of shared responsibilities between governments, business and the general public. The broadening of the set to policy instruments beyond direct regulation is one of the key orientations of the new approach. During the last decade the EU has promoted a well-developed mix of policy-instruments. On the one hand new, innovative approaches are introduced. On the other hand efforts are made to strengthen and transform national systems of direct regulation. In this article we focus upon the prime examples of the latter: the Integrated Pollution Prevention and Control directive IPPC (Council Directive 96/61/EC).

The IPPC directive is intended to change and harmonise the environmental regulation of industry in the member states by imposing common requirements for issuing permits to (large) sources of industrial pollution throughout the EU. The directive is modelled to a large extent after the UK system of Integrated Pollution Control (see below). The directive itself was published in 1996. New or significantly altered installations had to be regulated by October 1999. Concerning the policy content the directive has two leading principles. First, regulation must take the

environment as a whole, instead of regulating separate environmental media (air, water, waste, …). Second, emission standards are to be based on the 'Best Available Techniques' (BAT) which means that in principle the most effective technology for pollution abatement must be used, but under economically and technically viable conditions. The European Commission organises a horizontal exchange of information on Best Available Techniques, following the requirements of article 16.2 of the IPPC-Directive. The result of the information exchange is laid down in so-called BAT Reference documents (BREFs) that then have to be incorporated in environmental permitting procedures in the member states. BAT Reference documents are produced for each industrial sector mentioned in Annex 1 of the Directive. In total approximately 30 BREFs will be produced, covering some 50 industrial activities[182]. For each BAT Reference document, a Technical Working Group (TWG) is established with experts from member states, industry and environmental NGOs. Member states may choose how to deliver their input to the working groups. The task of the Technical Working Groups is to provide and validate the available information. The process mainly involves a technical assessment of possible techniques. In the end a TWG has to come up with a proposal for BAT for a specific area. The European IPPC Bureau in Seville, Spain facilitates the work of the TWGs. The directive has little to say about the institutional framework in which it must be applied (Gouldson and Murphy 1998:46). Member states may choose to have one agency issuing permits, or may opt for a coordinated permit issued by different agencies.

In sum, the IPPC directive clearly demonstrates the multilevel character of European environmental policy with both the national and the European level strongly involved, as well as local regulators and representatives from industry. The directive holds fairly strong requirements concerning policy content but with ample opportunities for member states to have a say in it. The directive also calls for an integrated institutional structure and asks governments to collaborate with industry in developing the BREFs.

Implementation into the domestic setting

We are studying how five member states are dealing with the IPPC directive: Denmark, Germany, the Netherlands, Spain and the United Kingdom. These countries have been chosen to provide a broad cross-section of environmental policy in Europe. Next to written sources/policy documents and statistical data (Eurostat), data have been gathered through sources of information of the EU (DG XI, IPPC Bureau, EMAS Helpdesk) and (telephonic) interviews with key-actors within national ministries and agencies of environmental affairs. Below we describe the process of implementation per country followed by a comparative analysis.

Legislation in *Denmark* uses broad framework laws. Implementation of decisions on guidelines is left to negotiations between major interest organisations and the ministry. The main act in industrial regulation is the Environmental Protection Act of 1973. This act already made use of an integrated permit system with an integrated pollution prevention and control approach that stimulates the use of best available technologies, with a recent emphasis on cleaner technologies (OECD 1999: 134). The introduction of IPPC into the Environmental Protection Act was therefore fairly easy. Only art. 15 (concerning public participation in permit procedures) contained a new element for Denmark. It has now been added to the Environmental Protection Act, but only for the few Danish installations that fall under IPPC. Permitting procedures for other installations still go without formal public participation. As Denmark has a profound decentralised political and administrative structure (Christiansen and Lundqvist 1996), regulators in Denmark have a lot of discretion and are expected to take the local situation into account when issuing permits. Danish permits had a more or less guaranteed validity of 8 years. The more centralised system of Best Available Techniques puts some pressure on this practice. Denmark has a well-established tradition of formal and informal collaboration between parties (OECD 1999: 145). This has not resulted in a comprehensive process of developing national input for the Technical Working Groups. Denmark only participates in the groups that are directly relevant to the current industrial structure (18 out of 32). Also the number of representatives from Denmark in the working groups is well below the average of the other four countries under study (18 representatives in total) and they do not usually deliver formal national reports as input to the work of the group. This can be explained by the fact that Denmark is a late industrialist. Even today there are few large industrial plants and there is relatively little heavy industry (Andersen 1997: 251). The practical meaning of IPPC is therefore limited to Denmark. After publication of the BAT Reference Documents they wo not be formally incorporated into Danish law. A Statutory Order is expected that will proclaim 'that they shall be used as reference

[182] Mid 2001 9 BREFs had been published, see http://eippcb.jrc.es.

documents', and not as binding documents.

The relevant act in industrial environmental regulation in *Germany* is the Federal Immission Control Act (Bundesimmissionsschutzgesetz). The 1974 act forms the basis of a nation-wide, comprehensive law on air quality, noise abatement and plant safety. German environmental law is, however, extraordinarily fragmented (Pehle 1997; OECD 1993). First, there is federal legislation and legislation by the states. Second, most measures and regulations still are concerned with individual environmental media (Jänicke and Weidner 1997: 142). In principal Germany uses emission limit values instead of prescribing certain techniques. This is another perspective on limiting industrial emissions than the one employed by IPPC with its focus on techniques. Germany participates in 22 Technical Working Groups with a total of 62 representatives. Although Germany's policy style can be characterised as inflexible and legalistic, the German society in general has a strong corporatist structure (Knill and Lenschow 1998). Germany usually does not deliver its own formal notes as input, but it does form so-called shadow groups for each working group. In the shadow groups industry is also involved, next to representatives from the federal level and the Länder. After publication the BAT Reference documents will be incorporated in the 'TA Luft' in which emission limits are laid down instead of techniques. Experts will evaluate the need to change the emission limits when a new document is available. Also then, it is expected to contain mostly emission levels, but then based upon the list of techniques mentioned in the BAT Reference document.

The basis for environmental policy in *the Netherlands* was laid in the early seventies. In 1972 the Ministry of the Environment was installed. With some urgency media-specific environmental laws were formulated depending on a strong command-and-control mechanism. Since the 1980s there is a strong development towards integration (OECD 1995: 32; Liefferink 1997: 218). The Environmental Management Act of 1993 (Wet Milieubeheer) incorporated most medium-based laws that had been established previously. Key feature of this act is the provision for a new integrated system of environmental permitting that enables organisations to apply for a single permit covering nearly all operations except for discharges to water. Pollution control in the Netherlands already was a co-ordinated but not fully integrated system (Gouldson and Murphy 1998: 110). Except for some technical details, IPPC therefore gave a close fit with the Dutch regulatory system. The transposition of IPPC was fairly easy. The Netherlands contributes to 25 Technical Working Groups with a total of 63 representatives. The current practice in the environmental field reinforces the strong neo-corporatist traits of the Dutch society with its tendency towards bargaining and co-operation with interest groups (Liefferink 1997: 223). The input in these groups is therefore created through extensive consultation with and participation from industry (associations), and documented in so-called Dutch Notes. After publication the BAT Reference documents will be integrated fully into the Dutch Emission Guidelines (NER).

Institutionalisation of environmental policy in *Spain* started in the 1970s but it took until 1978 before investments in environmental areas became somewhat significant (De Esteban Alonso and López López 1993). During the first decade of democratic Spain environmental affairs still were more or less neglected (Font and Morata 1998: 213). Most attention was given first to re-establishing democracy, and then to the economic expansion. Environmental protection did not meet general international standards before Spain's inclusion in the EU (Roy and Kanner 2001: 246). Mandatory regulation in Spain also still takes place in a fragmented regulatory system. Both the legislation as the implementation structure are 'sectorilised', although differences exist between regions. The constitution gives the autonomous regions wide responsibilities for the management of their environment. They can also set stricter standards (OECD 1997). One of our respondents described IPPC as "revolutionary" to Spain. A dramatic modification is required to implement it (Rodriguez de Sancho 2000). At the time of writing the directive was still not transposed but a draft law was being discussed in Parliament. The policy style of Spain is described as closed, non-co-operative, bureaucratic and intangible (Subirats 1999; Font and Morata 1998: 217). Policymaking is often a closed process, although during implementation some form of participation exists. Spain lacks institutionalised channels for consultation (Pridham 1993). In line with the interventionist policy style, not much public debate has taken place around the draft. The exception in Spain is Catalunya. This region implemented some two years ago its own law that follows the principles of IPPC closely. Concerning the BAT Reference Documents: Spain participates with 52 representatives in 20 Technical Working Groups.

The *United Kingdom* has the oldest system of environmental protection (Carter and Lowe 1998: 20). Before 1973 the UK could be seen as a frontrunner and pathfinder on environmental affairs (OECD 1994: 99). In 1970 the environment ministry (Department of Environment) was established as a combination of sections of the bureaucracy that had previously existed in dif-

ferent departments. During the early 1970s major pieces of legislation were introduced. Traditionally the UK applied a fragmented approach to environmental problems. Separate policies were developed for air and water pollution, waste, etc. The legislation was broad and discretionary. There were hardly any legislatively prescribed standards and quality objectives (Carter and Lowe 1998: 25). Already in 1976 the need for an integrated multi-media approach was recognised in the UK. It took until 1990 however before the Environmental Protection Act was passed, which introduced Integrated Pollution Control. It has been a major source of inspiration for the IPPC directive. The IPPC directive therefore was of the same general nature than the existing system in the UK, provided some small details. The general policy style of the UK (especially in environmental policy) is being described as informal, accommodative, flexible, co-operative, consensus-oriented and technocratic with a clear role for scientific understanding of issues (Carter and Lowe 1998: 25, Gouldson and Murphy 1998: 71; Vogel 1986; Weale 1997: 93). This is consistent with the lack of an overall national strategy. The IPPC directive was introduced through 5 rounds of consultation with industries and NGOs, in line with the mediating policy style. No great difficulties were encountered during these sessions. The UK participates in all 32 Technical Working Groups with a total of 59 representatives. They deliver their input through IPC Guidance Notes. After publication of the BAT Reference Documents, the UK will develop its own IPPC Guidance Notes, which will be based upon the reference documents, but are expected to be much more specific.

If we compare the developments within the five case countries, it is clear that major changes are taking place within each of the countries. The 'starting position' of member states in implementing European legislation, however, differs considerably. Member states had developed different legislative structures and used different kinds of permit requirements. The underlying policy styles of member states also differ considerably. This leads to variance in misfits, see table 1.

		DK	GER	NL	E	UK
IPPC	Content		X			
	Structure	X	X		X	
	Style	X				

Table 1: Misfits between Europe and the member states[183]

[183] The table gives an overview of major misfits and does not list all minor problems member states encounter when implementing European legislation.

Although most of the member states have succeeded in transposing the directive, it proved to be easier for some member states than for others. IPPC was the biggest challenge for Spain. The Netherlands and the UK on the other hand experienced little adaptational pressures since their regulatory systems were already more or less in line with IPPC. Germany, Denmark and especially Spain therefore experienced more adaptational pressures than the UK and the Netherlands. In Germany, the misfit mainly concerned the policy content (emission limits instead of BAT) and institutional structure (fragmented instead of integrated). For Denmark, the misfit concentrated on the institutional structure (decentralised system instead of binding national targets) and policy style (no formal public participation). For Spain, adaptational pressures developed on all dimensions, but mostly on the institutional structure (coming from a fragmented, underdeveloped system). In general you could say that members states with a close fit (the Netherlands and the UK) also follow the directive most closely. Denmark with its conflicting style and structure seems to be trying to insulate itself from IPPC, while Germany with its adaptational pressures regarding the policy content tries to increase the fit with its own regulatory system by participating extensively in the information exchange and by translating the outcomes in a way that fits more closely with its existing permit system. For Spain the gap between the existing regime and IPPC is too large to cross easily. The case of Spain proves that the lack of sufficient institutional capacity can seriously hinder the implementation of European legislation. The implementation of an integrated system of pollution prevention (such as required by the IPPC directive) proves to be difficult without a substantial system of regulation already in place. Without the existence of highly qualified regulators who are used to dealing with (complex) industrial processes, it is virtually impossible to negotiate 'Best Available Techniques' in an integrated way with industrial actors.

Conclusions

The European Union has become one of the main institutions in regulating the environment. From an institution merely producing technical standards the EU nowadays has become a promoter of a comprehensive and integrated approach on environmental affairs. Where sustainable development has become the main perspective, policies are intended to lead to a process of industrial transformation. Given the complexity of such a process and to avoid free-riders (member states that do not put sufficient pressure on industry), governance in the European Union has to

take place in a multilevel setting, that is in a tight interplay between the European and national level. National programmes need to be co-ordinated and supplemented by collective approaches. Policies may originate at the national level, then be transferred to the European level, followed by implementation by the member states. In order for an effective European governance system to develop this transfer needs to be a rather smooth process. In this article we have looked domestic responses to European legislation, in particular the implementation of the IPPC directive.

If we look at our data it is clear that misfits can happen on all three dimensions that we distinguished: policy content, structure and style. The question is whether the resulting adaptational pressures meet the same opposition. Our central expectation was that especially a misfit on institutional structure or policy style complicates the transfer. The one clear example of a misfit on policy content (IPPC in Germany) does not seem to create major difficulties. Although implementation is somewhat more complex than in the UK and the Netherlands for instance, this has more to do with its fragmented policy structure. More severe problems indeed seem to happen when adaptational pressures concern the institutional structure or the policy style. Although IPPC holds no strong requirements concerning policy style, it does ask governments and industrial actors to collaborate on developing national input for the Technical Working Groups. If a member state is not used to collaboration and negotiating with societal actors, this process seems more difficult. But the influence of style should not be looked at in isolation. We see a clear relation between style and structure. IPPC introduces a more centralised element in systems of direct regulation (by means of the BAT Reference Documents). This is an uncommon element for member states who are used to giving a lot of discretion to local regulators (e.g. Denmark). Turning such a system around requires more than a technical or administrative change. Going back to our question on what constitutes the institutional core, we conclude that it is the *interplay* between policy content, structure and style that determines how well European developments can be integrated in domestic settings. Especially when European legislation conflicts with the 'deep motivations' of actors implementation is complicated. These motivations are reflected foremost in the policy style, but of course they have also repercussions for the way institutional structures are built and the contents of policies. Elements of content and structure therefore might reflect the policy style, and vice versa. Policy styles are relatively stable and hard to change in general. Even if there has been a major change, like in the Netherlands where the authoritarian policy style with a distant, negative attitude towards target groups has changed into a new approach designed to encourage self-regulation (Bressers and Plettenburg 1997: 116) and in the UK where the policy style has been changed from a more flexible, cooperative style to a more formal and explicit approach (Weale 1997), there is no direct relation with European integration.

What does this mean for multilevel governance in the European Union? Developing such a system assumes that policy arrangements can easily be transferred from the European to the national level. Our analysis shows that this requires some uniformity in policy systems, especially in institutional structures and policy styles. We have to observe however that these differ considerably between the member states. The member states of the EU partly come from different political and cultural background. The starting point and national contexts therefore differ enormously. The environmental policies of the EU have to accommodate the problems of more or less industrialised and urbanised states, suffering from substantial environmental degradation, with individual member states being at different states in accepting and implementing the common environmental agenda (Butt Philip 1998: 254). The environmental conditions also differ between member states. Member states therefore have followed partly different routes and have built different institutional structures. Misfits between these domestic systems and European legislation are hard to overcome. We therefore expect that European integration will at best lead to some coordination of national approaches at a rather superficial level, but at the same time member states are able to preserve their national distinctiveness. The development of a balanced and co-ordinated European governance system for industrial transformation seems therefore out of reach as yet.

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The Different Concepts of Promoting Res-Electricity and their Political Careers

*by Volkmar Lauber**

This article is about concepts for a market framework for renewable energy sourced electricity (res-e) and their careers, i.e. their rise and fall, their successes and failures. It centres on the German and Danish renewable energy feed-in tariffs (REFITs) and on the new concept of tradable renewable energy certificates (RECs) which was promoted by the EU Commission and which was scheduled to be enacted in Denmark as early as 2000 (but postponed several times).

Why are some concepts more successful than other? The present article will look at the origins of these concepts in terms of ideology, political constellation and the intentions and expectations connected with their adoption; the "fit" between ideological origins and the milieu in which they found themselves, and the interactions that followed therefrom. There are also legal and political challenges to be considered. Finally, concepts of regulatory schemes are evaluated on the basis of their expected—and if available, of their actual—record and consequences in terms of economic and administrative efficiency, financial impact, regulatory stability and their "fit" with technological development.

Concepts for promoting res-electricity—a brief overview

In Europe, three main concepts competed in the area of creating a market for res-electricity. Before liberalisation became the dominant factor in the area of electricity, fixed feed-in tariffs (REFITs) were most common. After liberalisation however, the European Commission began to criticise them as incompatible with the Treaty. Three countries used competitive bidding for res-e tariffs: Britain, France and Ireland. Under this system, generators made proposals in successful rounds of bidding and obtained contracts about the compensation they would receive for given amounts of electricity to be fed into the grid in the future. This method was supposed to exert downward pressure on prices, a goal which was achieved effectively. Except for Ireland, this method also led to a very poor record of newly built res-e capacities. In the context of liberalisation, new ideas were formulated; soon they centred on a system relying on a market for renewable energy certificates. Under this system, there is usually an obligation on consumers or suppliers to buy a certain amount of res-e credits or certificates defined as a percentage of their transaction volume. This percentage is set to grow over the years according to a politically established schedule. Generators of res-e are issued certificates by an independent body. Thus generators sell the physical electricity on the general power market at the rates prevailing there, and the renewable energy credits or certificates (RECs) on the certificate market; in other words, RECs can travel quite far which is not possible for physical electricity. The generators have two sources of revenue, neither of which is really stable (as opposed to REFITs or bidding systems). This system was strongly favoured by the European Commission and some member states until the end of 1999, when Loyola de Palacio withdrew a draft proposal for a directive on res-electricity which was inspired by this model and which had once again run into very strong opposition, particularly from Germany and its wind industry. The proposal she submitted in May 2000, and the directive which was adopted in fall 2001 (Directive 2001/77/EC of 27 September 2001), are neutral with regard to the choice of instruments. Currently all three systems coexist, though not in equal strength. Ireland is the only country still using competitive bidding. Over the last two years, some states passed legislation to adopt the RECs system (Netherlands, Denmark, Italy, Flanders/Belgium, United Kingdom); a few more are or were considering it. The system has however been implemented so far only in the Netherlands in a somewhat modified version (no binding minimum percentage but tax exemption for res-e).

The two concepts—REFITs and RECs—are in competition not only in individual member states. According to article 8 of the res-e directive, the Commission may, at the end of 2005, make proposals for harmonising support schemes throughout Europe. This makes for a heated debate in renewable energy circles. The present article will focus on the German and Danish versions of REFITs (indeed fixed feed-in tariffs are often discussed as the "German" model) and on RECs as discussed in the course of the legislative process of the res-e directive and

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since.

Origins and background of the German REFIT concept

In 1990, the idea that a radical shift in energy supply was both necessary and possible had for some time been propagated in Germany by the highly successful Öko-Institut Freiburg and was known to many as "Energiewende". That idea received much of its original impulse from the oil crises of the 1970s, the "Waldsterben" (forest dieback) discussion of the 1980s (which was very intense in Germany) and the concern over world climate and carbon dioxide emissions which was about to lead to the Framework Convention on Climate Change and had been discussed in the German Parliament in the Enquete Kommission Klima of the German Bundestag. Besides this general environmental and energy background there was also the specific problem of German agriculture being faced with the perspective of liberalisation and declining markets, and therefore looking for new opportunities to earn additional income. In Northern Germany wind power was perceived as one such opportunity. It was in these circumstances that two CDU members of the Bundestag from Northern German districts, Erich Maaß and Peter-Harry Carstensen, submitted a private members' bill for a feed-in tariff for electricity from renewable energy sources. This was supported by all political parties in the Bundestag and resulted in the Stromeinspeisegesetz (StrEG or feed-in law) of 1990. The fact that this was handled by a private members bill is explained by the fact that the German ministry of Economic Affairs, which counts electric utilities as one of its key constituencies, was unwilling to submit such legislation. According to this very brief bill, utilities were requires to pay res-e generators a fixed tariff amounting to 90% of the tariff which the utilities charged their end customers. This was a solid reference that proved stable over the years, and it opened the door for an incredible success story. German wind generation capacity stood below 200 MW in 1991; it is expected to reach 8.000 MW at the end of 2001 and to surpass 10.000 MW at the end of 2002.

While this background can explain to some extent how this regulation came about, it does not go very far in explaining its specific formulation. For the purpose of explaining the specific structure of the German approach, it is useful to explore the economic and regulatory philosophy prevailing in Germany at that time (and which in fact had been the predominant philosophy since the end of World War II). This philosophy is marked by a specific kind of neo-liberalism, i.e. *Ordo-Liberalismus*. Neo-liberalism was a reaction to the old laissez-faire liberalism of the interwar period, to the growth of state regulation since the end of the 19th century and to state interventionism especially in the form of a planned economy. *Ordo-Liberalismus*—which goes back to the Freiburg School of the 1930s—stresses that the state should create a market framework for competition and prevent monopolistic or oligopolistic power. Such a framework should also contribute towards stabilising the business cycle. The state should also concentrate on preventing restrictions of market access and on actively promoting competition, and take measures against negative external effects. This the state should do by relying on instruments which are in conformity with the market (*marktkonform*), i.e. using market incentives (Brockhaus Enzyklopädie 19th edition, vol. 15, 1991, 429-30).

Ordo-liberalism became an all-pervasive economic and regulatory philosophy in Germany in the second half of the 20th century, particularly for the Christian Democrats (CDU) and the Liberals (FDP). It was "natural" that a bill coming from CDU deputies would rely on this philosophy, as in fact it did (one of the deputies, Erich Maaß, had studied business and economics). Electricity supply was in those days based on a public monopoly. Utility companies were organised on a regional basis. It is unlikely that many of them would have paid feed-in tariffs as generous as those provided for in the 1991 law. By establishing an obligatory minimum tariff, the German law enhanced competition and removed access barriers to the market for newcomers in the res-e field. The regulation required practically no bureaucracy to implement it, and other than the tariff there were no instruments which would have allowed arbitrary state intervention reflecting changes in political support. At the same time it allowed to some extent to take external costs into account. The utilities were required to pay considerably more than the avoided costs of fossil or nuclear generation. At the same time the competitive position of the utilities was protected by a clause providing that no utility had to accept more than 5% of its total volume from renewable energy sources, and could pass on the costs for higher percentages to its regional distributor (Oschmann 2000a).

Challenges to the concept during its first decade

However good a concept might be, it has to clear many different hurdles in the course of its career. In the case of the German law, these hurdles were of

different kinds: legal, political, financial and economic.

First, there was the legal hurdle. The 1990 law (StrEG) was challenged in different courts by the utilities on several different grounds. All these complaints were rejected by the courts. What the utilities did achieve was an atmosphere of legal insecurity which may well have served to inhibit the deployment of the renewables industry. After having been unsuccessful in all German courts, two utilities managed to bring a case before the European Court. The complaint in PreussenElektra v. Schleswag argued that the law violated the Treaty of the European Union, in particular the rules on state aid and on internal trade. A court in Kiel submitted the case to the European Court, which in 2001 decided that no such violation had occurred (European Court 2001). In the meantime the StrEG had been replaced by the EEG, which was even less likely to conflict with the Treaty since it took great pains to avoid trouble on this account.

Second, there were political hurdles. As the utilities were unable to defeat this legislation in the courts, they sought to enlist the support of DG competition. In 1990, the European Commission had approved the StrEG as being in accordance with EC energy policy; the share of res-e was small then and had little impact on prices. In the mid 1990s, the same DG began to eye the feed-in law with some suspicion. This law had by that time induced a tremendous boom in new wind power capacity, and 1995 was a record year in this respect. In DG competition's eyes this was an indication of excessive profits. Such a situation, it argued in 1996 in a letter to the German government, was incompatible with Community rules for state aid. It suggested that Germany reduce the compensation from 90% to 75% of the end customer tariff, limit the feed-in tariff in time, base it on avoided costs or take some other steps in this direction. It also announced that if the German legislature would not take the necessary measures, the Commission might revue the law according to the procedures for state aid (Advocate General 2000, para. 16-22).

The StrEG was modified in 1998, but the tariff remained as before. The government had in fact planned to lower the tariff, but this measure met with strong mobilisation on the part of res-e generators and environmental organisations and was therefore abandoned. In the same year, DG energy under Commissioner Papoutsis published a working paper on res-e which concluded that REFITs would eventually be incompatible with the EU Treaty since they represented a restriction on internal trade (European Commission, 1998). A few months later, in July 1998, competition Commissioner Van Miert, in a letter to the German government, criticised that none of the Commission proposals had been taken into account when the StrEG was amended, but did not initiate a review. Such a procedure was started however in 1999, after the ecotax law of April 1999 had led to an increase of the feed-in tariff, and again in 2000 after the adoption of the new feed-in law, the Erneuerbare Energien Gesetz (EEG). In the view of the Commission, both laws should have been notified as state aid measures (Advocate General 2000, para. 23-44). The Commission also intervened in the case of PreussenElektra pending before the European Court, asking that court to expand the concept of state aid so that it would include a feed-in tariff which definitely did not rely on state resources (up until then this element had been considered the crucial test). The Commission argued that legislative measures forcing end customers to contribute special resources for res-electricity should also be considered as state aid. In March 2001, the court rejected this claim. But until that point, DG competition effectively used its political-legal instruments to deter initiatives by member states that might have imitated the German feed-in tariff. The political pressure of the EU—which was a major element in the parliamentary discussion preceding the adoption of the EEG—did lead to some changes however. An effort was made to make the whole system more competitive. Thus tariff rates varied according to site quality, with higher payments reserved to low wind speeds and off-shore. Also, rates were to be reduced regularly by 1.5% every year, beginning in January 2002. Since liberalisation had brought the end of fixed tariffs for end customers, the feed-in tariffs were now set in absolute figures (Oschmann 2000a and 2000b).

Third, there is a potential financial hurdle to be taken by any measure promoting res-electricity. In the Danish case, where the tariff for res-generators was subsidised by state resources, this was a decisive consideration for the 1999 decision to shift policy to the development of a RECs system (see below). Since the German REFIT relies on payments by all electricity customers—with the burden equalised throughout the country as a result of 1998 amendments to the StrEG and even more so by the EEG—this problem did not arise in the same form. It is true that utility companies claim that the EEG carries a very high price tag, and they used this argument to legitimise price increases (or unduly modest decreases at a time of liberalisation). The real amount depends on the calculation of avoided costs and of the additional value of green electricity (no external costs etc.). A

recent calculation arrives at a total amount of about EUR 0.5 bn; this translates into about Eurocent 0.15 per kWh (Fischedick et al. 2001, 3).

As a fourth political hurdle, there is the effect of the law on the economic structure of Germany. One of the claims of the early advocates of renewable energy was that it would substitute fossil fuel imports by a domestic renewable energy industry which would contribute to employment and economic growth, and of course security of supply. This did not always happen though, and failure to deliver on this account can be quite critical. Under the British non-fossil fuel obligation system, valid in the 1990s, there was moderate investment in the renewables sector but no build-up of a domestic industry. This was explained by the lack of sufficiently favourable conditions for entrepreneurs in this area, who could not draw particular benefits from this activity given the NFFO structure of compensation (Mitchell 2000). Clearly the situation was quite different in Germany. Its res-e industrialists—in the areas of wind and more recently solar PV and biomass—are expanding at a very rapid rate and are quite capable of taking on world market leaders, as the history of Enercon, Nordex, SolarWorld and other firms shows. This industry can take on considerable projects such as large wind parks, with a cost range going into the billions of Euros. Such projects are taken on today by firms such as Plamback, Umweltkontor and Energiekontor, to name some of the largest (Sara Knight, Windpower Monthly, September 2001, 47-49; Renewable Energy Report, September 01,...; November 2001, 23 and 34).

Key advocates of the EEG—and of a strong German policy on renewables—view the Kyoto protocol with some scepticism. They point to the role of flexible mechanisms and of sinks which allow industrial countries to postpone the radical reform of their energy system at home. In their view, the protocol makes the fossil fuel system more cost efficient, but does not focus on the central task of our time, i.e. the shift to renewable energy sources. This goal, they say, cannot be achieved by a compromise with the fossil fuel industry and its advocates. It requires a determined industrial policy that opens new markets for new actors in the energy field (i.e. Scheer 2001).

Overall the German renewable energy programme is very much market-oriented. It relies on competition and market incentives. At the same time, it openly admits the need for extensive public support—regulatory, financial, and otherwise. In 2000, the REFIT as contained in the EEG represented one the key instruments of this system of support, contributing almost half of the resources for the promotion of market access of renewable energy sources (not just electricity) during that year (Fischedick et al. 2001, 11). Nonetheless the German system is decried by some RECs advocates as an example of economic planning on the model of former Eastern Europe, and even as economic Leninism.

The origins of the RECs model in the EU

Reflexion on a new regime of market competition for renewables started in the context of electricity liberalisation. Soon after the adoption of the liberalisation directive, the Commission favoured a system of tradable renewable energy credits (usually called "certificates" today). Res-generators would be compensated by two income streams. One would be derived from the sale and physical delivery of the actual electricity. The other would be drawn from the sale of credits, which would be issued by an accrediting authority. The market for such credits would have to be created by government regulation requiring a certain percentage of renewable electricity in the system. This would mean that all consumers (or suppliers) would have to acquit themselves of their legal obligation by buying the appropriate amount of credits rather than physical electricity from renewables. With regular increases of the minimum percentage of res-e over the years, the government can stimulate additional installations of res-e capacity. Supposedly there would be a steady pressure on the prices of credits to come down as these could be freely negotiated and as the system of a whole was open to competition (but see Hvelplung, New Energy 5/2001,18-23).

One of the early formulations of this idea can be found in the Green Paper for a Community Strategy "Energy for the Future: Renewable Sources of Energy" (European Commission 1996). This paper argued that with increased competition on energy markets, regulatory policy measures such as feed-in tariffs had to be replaced by "more market oriented measures" and then mentions specifically a system of "renewable energy credits" (European Commission 1996, 34). This would promote renewables at least cost and force utilities to "use their resources and creativity to lower the cost of renewables". This position was repeated in the White Paper of the subsequent year (European Commission 1997, annex II.3). This approach was then laid out in the draft proposal for an res-e directive circulated by Energy Commissioner Papoutsis in March 1998, which was however withdrawn mostly because of German opposition. Taken aback by this opposition, Papoutsis announced that a Commission working paper on the subject would soon furnish the decisive arguments in favour

of this approach.

This working paper "Electricity from Renewable Energy Sources and the Internal Energy Market" (European Commission 1999) illustrates a clearly deregulationist philosophy. REFITs are criticised because they are not based on "direct competition, either amongst Res-generators, or between Res-generators and 'traditional' electricity producers". For this reason they "*must, by definition*" (European Commission 1999, 18; emphasis added) lead to less pronounced innovation than under a scheme based on competition. By contrast, quota/competition-based systems (such as the British, French and Irish) were held to be most effective in driving down prices and in stimulating innovation (ibid, 16). However, the working paper did not marshall particularly impressive evidence for its case. Its argumentation relied expressly on "economic theory". The particular economic theory relied upon was that of neo-liberalism—but of a different kind of new liberalism than the German O*rdo-Liberalismus*. The neo-liberalism of the Commission draws on Milton Friedman. This brand of neo-liberalism is less concerned about the problem of unequal market power; by contrast, it stresses the danger of state power. Neo-liberal theory of regulation highlights the problems resulting from collusion between regulators and the regulated. While regulators are theoretically supposed to check private power in the name of the public interest, neo-liberal critics hold that they are likely to develop quite a different attitude over time—i.e. to formulate regulation for the benefit of the firms they are supposed to hold in check (……). On that basis, this kind of neo-liberalism resulted in a movement toward deregulation and liberalisation, as e.g. in the electricity sector with the electricity directive of 1996. The working paper strongly reflects this kind of thinking. Its authors—strongly influenced by the thinking of DG Competition—approach the subject on the basis of Commission experience with the creation of a single market in transportation, telecommunications, electricity and gas. In all these areas, they argue, the creation of a single market (and the break-up of national or regional monopolies) increased efficiency, improved technological innovation, and lower costs (European Commission 1999, 23). It appears that the authors of the Paper thought that bringing down res-e prices was mainly a question of organising res-e competition between large utilities which would otherwise try to extract excessive support from the state for going into this business. They did not address the question of utilities unwilling to become res-e entrepreneurs altogether, even though they were clearly aware of the problem (ibid, 26). Nor did they consider that a new class of entrepreneurs might need to be motivated for this purpose.

Those views of the European Commission were echoed by *Windpower Monthly,* one of the chief trade journals of the renewables industry. This journal is in close touch with the renewables community, and its articles give an idea of the likely world of renewable certificates trading. The journal's articles identify very strongly with the recent liberalisation of electricity markets and want to see it applied to renewables. They see this as a precondition for the rapid growth of res-electricity. In Europe alone, this growth is likely to require over 100bn during the current decade (Janice Massy, Windpower Monthly, November 2000, 38-40). In order to meet this level of investment, several conditions must be met. Soft money with state subsidies will not be sufficient; only utilities and private investors—most likely independent power producers—can come up with the necessary amounts. (This discussion refers specifically to wind, which is generally accepted as being the most competitive of the renewables today). Private investors will raise these amounts only if the markets are free from political risks; such risks are present in the case of political tariffs, which might be adjusted suddenly. Furthermore, they will do so only if they can rely on attractive rates of return. This in turn requires an emphasis on large projects and precise forecasts of profitability ("due diligence"), plus some form of protection such as minimum quota ("renewables obligation" or, as in the United States, a renewable portfolio standard—RPS). To sum up: a dependence of state support as in Germany (political feed-in tariff, soft loans, tax privileges) is bounding this view to cripple the further growth of the industry; the future of wind power is to be commercial, or to become a politically coveted *bonsai* industry (Janice Massy, November 2000, 38-40; Lyn Harrison, Windpower Monthly, September 2000, 6; Steven Probyn, ibid, 36-39; David Milborrow, ibid, 39-42).

Renewable energy certificates are perfectly compatible with such a system. To the contributors to Windpower Monthly, they represent a minimum of political intervention and a maximum of flexibility. By their downward pressure on prices, they make sure that there is an emphasis on profitability and on looking for the most profitable opportunities with regard to sites. All this will bring an early emancipation from political support. Increasing quotas create a steadily rising demand at the same time as some form of protection. The sale of green certificates offers a second income stream. Likely investors will be big and very big: independent power producers, utilities (they have access to cheaper money than upstart res-

generators), banks and pension funds. Farmer-owned wind turbines, "financed like a tractor" and operated like one, will become a thing of the past. But wind energy will be bound for a glorious future of expansion if it is freed from the mechanisms of state protection which are well-intentioned but definitely an impediment in the era of liberalisation and the coming era of commercial wind power.

The Danish REFIT and its emerging problems

Parallel to the discussion of RECs in the preparation of the EU directive, several states prepared such systems at the domestic level, on the assumption that this was the best market approach and with the expectation that a European market for RECs would develop in the near future. Initial leaders were the Netherlands and Denmark. The Netherlands introduced a Green label programme in 1998 which however presented some unique features, in particular an absence of a percentage obligation for renewables; for this reason it will not be discussed here. Denmark planned to introduce a market for renewable energy certificates in January 2000. Italy and Flanders/Belgium adopted similar systems; the UK is scheduled to pass the necessary legislation before the end of 2001 (Eurelectric 2000, Chris Crookall-Fallon and Tim Crozier-Cole, Renewable Energy World, July/August 2000, 43-51). Parallel to these governmental plans, a core group of power companies set up the Renewable Energy Certificate System (RECS) in early 1999 to draw up a framework for cross-border trading of such certificates and for creating an association of issuing bodies for certificates (Niall Martin, Windpower Monthly, November 2000, 41-42). Test trading began in early 2001. At that time, the group counted about 50 power companies as members. Within 18 months the organisation aimed at reaching a traded volume of 100 GWh, with a third traded internationally (Renewable Energy Report, January 2001, 13; Renewable Energy World, Jan./Feb. 2001, 22; Niall Martin, Windpower Monthly, March 2001, 18-19 and October 2001, 30).

With regard to national renewables policy in the area of green certificate trading, Denmark was clearly leading. Denmark's commitment to renewable energy sources goes back to the oil crisis of the 1970s. State subsidies for renewable energy sources started as early as 1979 and stimulated a boom in private and co-operative investments (the utilities were still reluctant at that time). When more and more turbines were connected to the grid, they started to take a restrictive approach. Confronted with the threat that parliament might pass legislation favourable to wind turbine owners, the utilities in 1984 negotiated a ten-year "voluntary agreement" which provided for feed-in rates of 70 or 85% of household tariffs and a contribution to grid connection costs. In addition, turbine owners received a substantial subsidy in form of a government tax refund (Hantsch 1998, 47-61). In 1985, the Danish parliament rejected nuclear energy for good. The Brundtland Report in 1987 and the Toronto Conference on the Changing Atmosphere in 1988 gave new impulses to Danish policy; Denmark's energy minister was eager to translate these concerns into practice. In 1990, a first Energy Plan was established; a second one followed in 1996 and set a goal of about 13% for the share of res-e by 2005, and of 35% by 2030 (ibid., 65-69). In late 1990, the electric utilities began to unilaterally alter the terms of the 1984 voluntary agreements to the disadvantage of wind turbine owners, arguing that the current arrangement led to extraordinarily large profits on invested capital, a claim refuted a subsequent study of the energy ministry (ibid., 74). In October 1992, the great majority of the Danish parliament passed a feed-in law setting the feed-in tariff at 85% of household rates; in addition, there was a very significant subsidy amounting to about 75% of this tariff which was added to the compensation (ibid, 76-78).

As in the German case, the Danish utilities dragged their feet on implementing the new law and successfully created an atmosphere of insecurity among potential investors. Conditions for wind power were improved somewhat in 1993 under a new government. This development was reinforced in 1994, when the environment and energy portfolios were merged and when Svent Auken became the new minister (until November 2001). His time in office brought a renaissance of Danish wind energy. Yearly installation rates, which had in fact declined since 1990, began to climb steeply in 1995 (Hunch 81-83).

Denmark is one of the leading countries when it comes to applying the EU directive on electricity liberalisation. For this reason it might have looked for alternatives to the feed-in tariff of its own accord. In any case, it is clear that the EU Commission argued that with the increased role of res-e in Denmark, trade distortions from state aid became more and more unacceptable (Windpower Monthly, December 1999, 34-36). The EU not only created pressure in this direction; it also seemed to advance an alternative solution as long as it was planning to legislate renewable energy credits for the res-e directive. At the time when the Danish electricity reform of 1999 was adopted, these plans of the Commission were still intact (they were only given up in December 1999, in the policy reversal by Loyola de Palacio).

There was an additional problem though which had developed in Denmark under the feed-in system that militated in favour of change. To some extent the system had become the victim of its own success. The high subsidy element of the feed-in tariff had become a substantial burden on the state budget as wind power expanded in Denmark (in 2001 it amounted to about 13% of total electricity supply). In 1998, more than 100m were paid out of the public budget under this title. Moreover, this amount could be expected to multiply over the next decades with the construction of offshore wind farms (Morthorst 2000, 1088). Of course this problem could have been corrected by making end customers pay as in the case of the German REFIT law. Other adjustments might have been considered, such as making the feed-in tariff dependent on wind speeds at the location of the turbine, the size of the installation and other factors. Obviously, these remedies did not seem as attractive to the government as a full-scale reform in the direction of full liberalisation.

In terms of its impact on Danish industry and employment, the REFIT system was extraordinarily successful. Danish wind turbine producers—and some other related businesses—became world leaders. Part of this was due to the stable home market which had seen the industry through its difficult early phases; since 1991, exports became actually more important than domestic sales (Hantsch 1998, 81). In 2000, Danish wind turbine producers (mostly Vestas, NEG-Micon and Bonus) held about half of the world market (Renewable Energy Report, April 2001, 9-10). Wind power had also had a lasting effect on Danish society. By 2001, about 150.000 families, 5% of the Danish population, owned a turbine or a share in one (T. Möller, Windpower Monthly, November 2001, 6). By taking on these investment risks, they had played a crucial role in securing the break-through of a new technology. It is true that especially in the second half of the 1990s, the generous feed-in tariffs had greatly facilitated bank financing for their investment.

The Danish Green Certificates Model

On the whole, the Danish REFIT had been a great success, but it had become too expensive to continue it in the form it had in the 1990s. Rather than being modified, it was abolished in the course of the great Danish electricity reform of 1999. This reform provided that all Danish consumers are obliged to buy a certain share of electricity generated by renewables; this share is to be determined by the Danish energy authorities for a number of years in advance, and was set at 20% for the end of 2003. The Green certificate market was planned as purely Danish at first, but with an integrated European market in perspective. Among other things this should limit short-term fluctuations in certificate prices, which are considered a serious problem (Hvelplung, New Energy 5/2001, 18-23). To limit these fluctuations, an upper and a lower threshold were introduced as a transitional measure. To set quotas in such a way as to obtain the desired growth in renewables capacity would admittedly be no easy task (Morthorst 2000).

Despite these problems, the reform was supposed to take effect as early as January 2000. In December 1999, many important questions about the new system were still not settled; no one really knew how certificate trading would function. Nor was it clear what this would mean in terms of transaction costs, especially for small units. Windpower Monthly welcomed the leap in the dark: "Goodbye cosy world of fixed prices and security. Hello cruel, competitive, liberalised life" (December 1999, 34). In January 2000 however, the start of the system was postponed. Disagreement broke out between the ministry and turbine owners on how to interpret the new regulations. By March, the government announced that the new system would start only in January 2002, after a delay of two years. But when this deadline approached, the new system was still not completely ready. In the meantime doubts about its viability and likely performance had increased. As a result, orders for wind turbines in the Danish market had declined to record low levels. In September 2001, energy minister Svend Auken was confronted with fierce criticism from a great variety of stakeholders in wind power development. As a result, the consensus that had long developed around wind policy, and which was not really broken by the first reform steps in 1999, was seriously eroded, with proposals from political parties going into many different directions (Torgny Möller, Windpower Monthly, November 2001, 6; Renewable Energy Report, November 2001, 4). Renewable certificates were postponed once more. In the meantime the concept had lost much of the glamour it had carried in its early days.

This decline in popularity was certainly in part due to the long policy uncertainty. But it should also be seen in the wider background. The concept of renewable energy certificates, as the concept of REFITs, was confronted with a variety of challenges which affected its career.

At the time of its first development, the Danish RECs system received considerable support from the EU, which in fact exerted pressure in favour of a "market based" approach (it is still an open question

whether RECs, with the panoply of regulatory interventions they require, are more "market" than a flexible REFIT) at the time of the Danish electricity reform. The EU res-e directive then under preparation was likely to support the new system by making it EU-wide after a period of transition. This situation changed when de Palacio withdrew a draft proposal for an res-e directive based on this concept in December 1999. The change was confirmed by the submission of the new directive proposal, neutral with regard to promotion instruments, in May 2000, and by the revision of the Community framework on environmental state aid in late 2000. In October 2000, the advocate general suggested in the PreussenElektra case that the German feed-in law was not incompatible with EU law, neither with its state aid provisions nor with its provisions for the internal market. This position was confirmed by the European Court in March 2001. That judgement reduced to naught the position that DG Competition had been actively propounding over several years—i.e. that REFITs were incompatible with EU law. Threats by this DG to review such legislation under state aid rules no longer carried much weight (Lauber 2001). Even so it took Commissioner Monti about half a year to concede the point. This full scale reversal had immediate effects on member state policies. France and Portugal introduced a REFIT system in 2001. Sweden and Belgium seem to have lost interest in RECs. Other developments contributed to make liberalisation appear less attractive than earlier on. The California electricity crisis of summer 2000 probably led to second thoughts about applying this approach to electric utilities. The current difficulties—perhaps bankruptcy—of Enron, possibly the world's largest independent power producer, may have a somewhat similar sobering effect (for the advocates of commercial wind power the independent power producers are bound to play a central role, see above).

There is another obvious reason why renewable energy certificates met with increasing scepticism by 2001. This is the near-collapse of the domestic wind turbine market in Denmark (except for offshore wind farms for which special rules apply). The industry was not at first opposed to the reform. Some of its representatives—thus Poulsen, chief executive of Vestas—held that the introduction of more competition would be unavoidable sooner or later (interview, Windpower Monthly?). But they could hardly accept a reform that threatened severe damage. It is for this reason that the reform introducing RECs was shelved again in late 2001.

Denmark was regarded as a forerunner for renewable energy certificates, as a test case. Accordingly, expectations were quite high. From this perspective, the situation prevailing in the fall of 2001 was a disaster. Perhaps the reform was carried out under too much time pressure. Even Eurelectric—the European association of electric utilities—thinks that the states embarking on tradable certificates in 2001 will not have adequate time to prove their effectiveness by 2005, when the Commission may formulate a harmonisation directive (Janice Massy, Windpower Monthly, September 2001, 62). It remains to be seen what other member states—especially the United Kingdom—will make of this concept. In addition, the model is applied in Australia (where a market is functioning since January 2001) and in Texas. It is conceivable that these experiences cannot be easily transposed to the European context.

Conclusion

Concepts rise and fall according to their interaction with "reality", with society and its subsystems. In particular, this is true for belief systems, legal rules, political strategies, and financial and economic consequences. The purpose of this article was to show the different careers of the German and Danish concepts for promoting res-e electricity. Both the German and the Danish REFIT were highly successful; in absolute terms, the Danish system was more successful insofar as it led to the successful development of a new generation technology, i.e. wind power, and to a share of wind power in the national electricity market which is several times as large as in Germany.

Both systems met successfully the legal challenges of their opponents, and both were very successful in meeting the challenge of economic impact; in this respect there is great similarity. The same thing cannot be said of the political challenge of liberalisation and the financial challenge (impact on state budget).

Electricity liberalisation led Germany to reformulate its REFIT to bring it more in line with a competitive market. Due to its design, the German REFIT had never created a burden on public finance, so there was no need for reform on this ground. Liberalisation was taken into account with the reform of 2000. This reform distributed the utility companies' extra costs equally among them (to be passed on eventually to end consumers as before), resulting in a level playing field among competitors. Other aspects of that reform imposed greater demands on performance by res-e generators—the very goal that liberalisation was supposed to achieve.

Denmark by contrast had a strong element of state aid in its REFIT. This brought it in more direct con-

flict with the EU Commission, especially with DG Competition. At the same time the very success of the Danish REFIT made it quite a burden for the state, and one that was bound to expand rapidly given Danish plans to increase the share of wind power in the national electricity system. For this reason—and under pressure from the EU Commission—Denmark used the electricity reform of 1999 to introduce an entirely new system which at that time had not been used anywhere. This transition to tradable renewable energy certificates was however insufficiently prepared and led—at least temporarily, i.e. for the last two years—to rather undesirable results before being shelved indefinitely in late 2001. Even the basic commitment to a high share of renewables had already come under question.

It is unlikely that other member states will be eager to imitate the Danish example. The whole concept of tradable renewable energy certificates is likely to suffer a setback as a result of this aborted reform unless Britain succeeds with it in the near future.

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The Meaning of Vertical and Horizontal Policies for Renewable Energies

*by Danyel Reiche**

In this article I will analyse obstacles, success conditions as well as the meaning of vertical and horizontal policies for renewable energy sources (RES) in the European Union (EU). Are the national policies influenced by European legislation or do national states play the crucial role in promoting these environmentally friendly energies? In the beginning I will analyse why it took the EU more than three years until the "Directive on the promotion of electricity produced from renewable energy sources in the internal electricity market" was published in the *Official Journal of the European Communities* in September 2001. Which points prevented an agreement between the Member States? In a next step I will show that, until now, the nation state has played the most important role in developing renewable energies. To explain the different shares of renewables in the individual Member States I will look at the different obstacles and success conditions. Finally, I ask whether the recent RES-Directive might be the starting point for a transformation process from divergence to convergence in national promoting systems.

The bargaining process for an EU directive on renewable energies

It took more than three years until Commission, Council and European Parliament agreed on a directive in the field of renewable energies. Which were the controversial issues? From my perception the following three issues were the most disputed questions:

(1) How are renewable energy sources defined? Is there any limitation for the use of hydropower? Is only small hydropower accepted as a renewable energy or is it also possible to count the energy from big hydropower plants? The issue of the use of waste as an energy source was even more disputed. Can electricity produced from waste incinerators be promoted as renewable energy? For countries like the Netherlands and the UK this was the most important point because most of their "green electricity" is from incinerations.

(2) Should the EU Directive include binding national targets for electricity produced from renewable energy sources? Should there be any sanctions for countries that are not successful? Or should the targets only have the character of reference values? Especially the RES-latecomers in the European Union feared a directive of a binding nature.

(3) Should there be a harmonised promoting system for renewable energies? Or should there further be a divergence of systems such as feed-in tariffs in Germany, Spain and Greece (recently also in France), tax advantages like in the Netherlands or tender systems like in the United Kingdom and in Ireland? Especially RES-forerunners like Germany feared that will have to give up their successful promoting system.

The crucial role of the nation state in the past

Before turning to how the Member States found a compromise and whether the new Directive means that there is convergence at work, I want to emphasise that the EU did not play a crucial role in the past. There were only some subsidy-programmes (ALTENER, SAVE) that promoted renewable energies. These programmes only gave an additional impulse. The main stimulations came by the nation state.

Explaining differences

One might think that the share of renewable energies is only high in countries with good natural conditions. Indeed, countries leading in renewable energies are countries with good conditions concerning pluviometry, distribution of rainfall over the year and inflow which in turn make a high production of electricity from hydropower possible. These countries are Austria (70% share of RES in the electricity consumption in 1997), Sweden (49,1%), Portugal (38,5%), Finland (24,7%), Spain (19,9%), Italy (16%) and France (15%). But one of my main arguments is that one cannot only explain national differences only with the natural conditions. I want to show this by briefly outlining the story of the development of wind energy in the EU. The countries with the biggest wind potential in the EU are the UK, France and Ireland. But Denmark, Germany and Spain, which have a lower potential—they are ranking fifth (Spain), eighth (Germany) and eleventh (Denmark) for wind potential in the EU—had at the end of the year 2000 an

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installed capacity of nearly 11.000 megawatt, which is almost twenty times more than the installed capacity in the UK, France and Ireland together (see appendix 1). This means not the climate but other factors account for the differences. I will give some reasons, which are the main explanations for the success or failure of renewables in the different countries. For this I will focus on country-specific hurdles. General restrictions such as higher costs, technical and structural problems (renewables do not fit the prevailing central station electricity system) will not be discussed.

Obstacles and success factors of renewable energy sources

The availability of fossil resources also plays an important role. The Netherlands, for example, has the Groningen and some small gas fields. In the Netherlands the gas penetration is the highest in the world and in the short and medium term there is no finiteness is not foreseeable. The incentive for promoting other energies is not as high as, for example, in Denmark, which has nearly no own fossil resources.

Lobby Groups like the *Bundesverband Windenergie* emphasise the crucial role of the political promoting systems and support feed-in tariffs. These minimum payment systems are indeed very successful: the leading wind energy countries Germany and Spain have feed-in tariffs and also old installations in Denmark are based on feed-in tariffs. But there is no natural superiority of any instrument. It depends on the specific construction of the tool. The main explanation for the success of the countries that use feed-in tariffs is that they offer investors long-term security. Germany, for example, guarantees investors the guarantee that it pays the feed-in tariff for a period of 20 years. In the Netherlands, which have an attractive system of tax advantages, investors are more careful because there is no security at all. Rules can change yearly and there have been examples of that. In September 2001 the government announced, for example, that from January 2002 on hydropower wouldn't be exempted from the energy tax anymore.

If one analyses obstacles for renewable energies one cannot emphasise enough that it has to be differentiated between the single renewable energy sources. For wind energy plants the permit procedure plays an important role. In Germany, for example, every municipality has to show in its spatial planning where it is feasible to build wind plants. In the Netherlands, for example, it is much more difficult to get a permit. One needs an environmental and a building permit. For these permits local plans have to be changed. In this process societal groups exert influence. If there is resistance municipalities often give up their wind park plans because they prefer a consensus-based decision making. Either they give up their plans or the opponents go to court. It often takes many years until plans for building wind parks are realised in the Netherlands.

No differentiation in the RES-promoting system is an advantage for cheaper renewables such as hydro, biomass, wind, and a disadvantage for still more expensive renewables like photovoltaic. In Germany there are different feed-in tariffs. Photovoltaic receives the highest payment, nearly one German Mark (0,99 Pfennig = 50,62 Cent). In the Netherlands all renewables get the same promotion: the exemption of the energy tax. No wonder the German solar-market is rapidly growing whereas the Dutch market is stagnating.

As already mentioned in the beginning the Member States finally agreed on a directive on the promotion of electricity produced from renewable energy.

Convergence at work?

In the short-term there will be further divergence in the systems for promoting renewables. The Directive says that one important means to achieve the aim of this Directive is, in order to maintain investor confidence, to guarantee the proper functioning of these mechanisms, until a Community framework is put into operation. Whether there will be in the long-term a Community-wide framework regarding support schemes is uncertain and, from my point of view, unlikely. The Directive says that it is too early to decide this, in view of the limited experience with national schemes and the current relatively low share of price supported electricity produced from renewable energy sources in the Community. But in 2005 the Commission will present a report on experience gained with the application and coexistence of the different mechanisms. This report will be accompanied by a proposal for a Community framework with regard to support schemes for electricity produced from renewable energy sources. If there were a proposal for a Community framework this would not mean convergence in the short-term because the Directive says that the proposal should include sufficient transitional periods for national support systems of at least seven years. This looks for an incremental change that is typical for the EU. But even this is uncertain. Firstly the Directive says that there should only be a proposal for a framework if necessary. This would be the case if the Member States missed their targets. Secondly this proposal would also need the

approval by European Parliament and the Member States. It is unlikely that it is easier to agree in 2005 than in 2001.

Resume

In the past the nation state played the key role in promoting renewable energy sources. Factors like the practise of permit procedures and the long-term security of political promoting systems explain different success. It is uncertain whether there will be a harmonisation of promoting systems in the EU in the future. If this is the case it will be interesting to see which system will push through on the European level. The Directive might mark the beginning for a transformation process from horizontal towards vertical policy. The reference values for the Member States will only confirm the development in the forerunner countries but they might be an additional incentive for latecomers like the UK and the Netherlands.

Appendix 1: Wind energy in Europe

Installed capacity in MW

	1995	1996	1997	1998	1999	2000
Germany	1.132	1.545	2.080	2.874	4.443	6.113
Spain	133	249	512	834	1.225	2.538
Denmark	637	857	1.116	1.450	1.761	2.364
Netherlands	249	299	325	363	411	449
Italy	33	71	100	180	283	427
UK	200	270	320	334	353	406
Sweden	69	105	117	150	215	241
Greece	28	29	29	39	82	226
Ireland	7	11	51	63	73	129
Portugal	9	20	38	60	60	99
Austria		3	20	30	42	79
France	3	10	10	19	22	62
Finland	6	8	12	17	38	38
Turkey		0	0	9	9	19
Luxembourg		2	2	5	10	15
Norway		4	4	9	13	13
Belgium		7	7	8	9	13
Czech Republic		7	7	7	12	12
Russia		5	5	5	5	5
Poland		1	3	3	5	5
Switzerland		2	2	3	3	3
Latvia		1	1	1	1	1
Romania		0	0	1	1	1
Sum	2.506	3.506	4.761	6.464	9.076	13.258

Source: www.wind-energie.de/informationen/zahlen-zur-win…/installierte-leistung-europa.ht

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European Union as a Global Policy Actor: The Case of Desertification

*by Minna Jokela**

In this article, the central question is what kind of actor the EU is and whether it be considered as an international actor (Marks *et al.* 1996, vii).

When studying the position, role or the effect of the European Union in the world, I argue that actorness is a useful concept. It offers a perspective which is connected both to the institutional development of the Union and to the changing character of the international environment. Even though the changing international system has created possibilities to the wider and more ambitious role of the EU, it also has brought out the question: Is the Union able to determine and carry out efficient international politics? The purpose of this article is to shed light to the interplay between global governance and regional governance. The emphasis is on linkages between different domains of action; in other words I am focusing on different institutional learning processes, especially the challenges emanating from the global level to the European and the possible feedback from the EU to the global negotiations.

Analysis of the external role of the EU in global environmental politics is important for several reasons. First, national participation in attempts at international regime construction has increasingly been channelled through EU institutions. It follows that third parties wishing to influence such processes have to come to grips with the rather novel ways in which the EU act in international environmental politics. Second, environmental policy is different from the generality of EU external relations. The ways in which it operates cannot be inferred from a knowledge of the conduct of trade relations or the common foreign and security policy. Thus, it follows that the EU as an environmental actor in the international system has its own unique character. Third, the extent to which the EU participates as an actor may well make a difference in the conduct of negotiations and their outcome. (Vogler 1999, 26-27.)

The EU is becoming an increasingly visible actor in international environmental negotiations. It contributes directly to the formulation of international agreements, is a party to all the main international environmental conventions, and provides binding means for the implementation by its member states of soft international law. The intergovernmental nature of the EU decision-making may, however, clash with attempts by the EU to present itself as a truly supranational actor capable of taking on the leadership role it desires in the formulation and adoption of international environmental agreements. The issue of EU leadership in international environmental negotiations is a recurring theme in EU affairs. (Liberatore 1997.)

The origin of the EU environmental policy goes back to the preparations for the 1972 Stockholm Conference on the Human Environment. EU environmental policy was developed in a regime building process reflecting many characteristics of typical multilateral negotiation. Initially, there was a stage of agenda setting drawing heavily from the work of the Stockholm Conference. This stage included the determination of basic guidelines for EU environmental policies or even the setting of concrete objectives. The ensuing process stage was characterised by problem solving and the searching for formulas. (Sjöstedt 1998, 243-244.) The European Union itself became a signatory to a number of international treaties on the environment since the early 1970s. Subsequently, it has tried to appear as a unitary, coherent and goal-oriented actor in this context.

Global desertification negotiations

Regimes are important when they solve the problem, but they also matter because they force parties to the negotiation process. International negotiations involve not only interests, but also emotions, attitudes, and cultural backgrounds. Negotiators do not necessarily conform to the model of a rational actor in the negotiating table (Sjöstedt 2001, 281). It is useful to study the life-cycle of a particular environmental negotiation process and the way actors negotiate. The life-cycle of an environmental treaty begins long before delegates are bargaining over specific issues and continue once agreement is reached (Chasek 2001, 2-3). In this article the focus is on the role of one particular actor C the European Union C in the global desertification negotiations.

Desertification had been a subject of international cooperation for nearly three decades until it was ac-

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cepted to the agenda of the United Nations Conference on the Environment and Development (UNCED) in 1992. It was accepted because of the persistence of the African countries. When the issue was first raised in UNCED, only France, with its special ties with Africa, expressed support for the idea. Most industrialised countries and the World Bank argued that the primary problems were with the structure and macroeconomic policies of African governments. (Elliott 1998, 91; Porter et al. 2000, 132-133; IISD: AA Brief Introduction....) Desertification was taken to the global agenda because the United States, after opposing a desertification convention throughout the UNCED negotiations, shifted to backing such a convention in the hope of getting African support on forests and on the remaining issues in the Rio Declaration. Other industrialised countries then followed, and the call for a desertification convention became part of the Agenda 21. (Elliott 1998, 90-91; Porter et al. 2000, 132-133.)

Final text of the UN Convention to Combat Desertification (CCD) was agreed in June 1994 and the convention entered into force in December 1996. 178 countries have now signed and ratified the convention, and five Conferences of the Parties have been held. Desertification convention is an example of an international regime, that was set up by the initiative of the developing countries despite the unwillingness of the industrialised countries. Its central objective is to break the vicious circle of poverty and the use of depleting natural resources in dry areas, especially in Africa. (DeSombre 2000, 37; Elliott 1998, 89-94; Porter et al. 2000, 130.) Desertification is defined by the convention as "land degradation in arid, semi-arid and dry sub-humid areas resulting from climatic variations and human activities". It results from poor land management, which can be exacerbated by climatic variations. It occurs because drylands ecosystems are extremely vulnerable to overexploitation and inappropriate land use. Desertification is closely linked with other environmental issues, notably biodiversity and climate change.

The African countries were the lead states in the formal negotiations. Whether debt and trade issues should be included within the scope of the convention was a central issue, affecting the obligations, action programmes, and regional annexes as well as sections on scope, objectives and principles. The industrialised countries argued that those North-South economic issues could be negotiated only in other international forums. (Porter et al. 2000, 132-133.) Differences over financial resources and the financial mechanism nearly caused the negotiations to collapse. G-77 demanded commitments to new and additional financial resources and the creation of a special fund for desertification as the centrepiece of the convention. The industrialised countries were a united veto coalition in rejecting any provision for new and additional financing. They felt they bore no responsibility for the problem of desertification world-wide, unlike the issues of ozone depletion and climate change, and were therefore unwilling to incur any obligation to increase their financial assistance to affected countries. The industrialised countries also vetoed the use of GEF (Global Environment Facility) funds unless the project contributed either to the prevention of climate change or to biodiversity conservation. (Porter et al. 2000, 134.)

The deadlock on a funding mechanism was broken only after the United States proposed a Global Mechanism (GM) under the authority of the Conference of the Parties, to be housed within an existing organisation. The purpose of Global Mechanism is to improve monitoring and assessment of existing aid flows and increase co-ordination among donors. Developing countries were dissatisfied because the GM would not increase development assistance to African and other countries suffering desertification. They had to accept the compromise as the only one acceptable to the donor countries. (Porter et al. 2000, 134.)

Global Mechanism was a political compromise. It is a co-ordinator and facilitator of funding and not an independent fund itself. Question of the globality of desertification is connected to the issue of funding mechanism: donors opposed the definition of desertification as a global problem, because they did not want to open the GEF window. Lack of a proper funding mechanism has hampered the relations of industrialised and developing countries throughout the negotiations. The EU is one of the most significant donors of the desertification convention, and it continued to be a major source for financing the CCD. It seeks to make resource use more efficient and help the GM mobilise resources. Industrialised countries have also stressed using existing institutions and mechanisms. Overlap with the CCD secretariat has to be clearer. (IISD 1997; 1998; 1999.)

Actorness of the European Union

The analytical criteria for determining the status of the EU as an actor are unclear. What should we use as a major unit of analysis when studying the EU as an actor in global politics? What would be a fruitful way to study the European Union, which is not a state, not an intergovernmental organisation or a non-governmental organisation. The European Union is a

hybrid: something in-between them all. How should we determine an actor in international politics? There is no consensus on what it means to be an actor. International relations literature provides limited guidance as how one might recognise an actor which is not a state. Often the students of EU are asking whether the EU is an actor or not. This work is, however, arguing that it is more meaningful to phrase the question: *to what extent is the EU an actor, or what kind of an actor is it?*

For a long period actorness in the international political system was unproblematic. The system was by definition composed of interacting sovereign states. Only they had the right to participate and the capability to act. The significance of state as an actor is a continuing feature of the state system. Despite the obvious diversity among states, they share three features without which they cannot be said to exist. They are: a territorial base, a population and a sovereign government. No other international actor possesses such qualities. The EU is, however, perhaps closer to those qualities than any other actor in the international arena. Thus, it is necessary to draft some criteria to evaluate the actorness of 'would-be international actors', who have some attributes of nation states, but simultaneously differ from them in many ways. Ultimately the key issue of actorness in international politics is the ability to play a significant role. But how can we measure it? It can be defined as the capacity to behave actively and deliberately in relation to other actors in the international system. (Sjöstedt 1977, 16; Vogler 1999, 27.)

Surprisingly there have not been many studies dealing with the role of the EU in global environmental politics. Some articles notice that the EU has a particular role in global politics, thus justifying this study, but they are almost entirely lacking any aspire to theorise this phenomenon (see e.g. Liberatore 1997; Rowlands 1998). Charlotte Bretherton and John Vogler seek to answer to question: what does it really mean that the EU is in some respects a force in world affairs; an actor that has its policies, defends its interests and is urged to act. They argue that the EU is a multifaceted and variable actor, which cannot be fitted into any orthodox template of a nation state. (Bretherton and Vogler 1999; Vogler 1999.) Markus Jachtenfuchs deals with the role of the EU in the climate issue. His argument is that action must be explained the way actors reflect about a problem. Thus it is important to examine not only how actors get what they want but also why they want what they want. (Jachtenfuchs 1996.)

The nature of the EU is a challenge itself. It is neither a state nor a non-state actor, and neither a conventional international organisation nor an international regime. It is an organisation made up of fifteen member states and numerous institutions. Most importantly the EU's involvement in world affairs varies over time and across issues. (Jupille and Caporaso 1998, 213; Ginsberg 1999, 432.) It is a unique, complex and changeable entity. The European Union has now interests and aspirations, it takes up positions, is urged to act, negotiates and implements. On a closer examination the EU is a puzzling entity: sometimes a single player represented by the Commission, sometimes a group of sovereign states represented by the Council Presidency. In international environmental diplomacy the EU can shape its shape virtually by the hour. (Vogler 1999, 24.)

Criteria of actorness

A cadre of scholars has worked on conceptualising the European Union as an international actor but, as Ginsberg argues, explanations are still at the pretheoretical stage: although theorists are developing new and reworking old explanatory concepts, these concepts are not linked in any meaningful way to an overall analytical model (Ginsberg 1999, 429). Here my purpose is to try to determine the basic factors of EU actorness. In this article I do not discuss the background factors of the EU global policy actorness, but I concentrate on the independent and dependent variables. I have discussed the global and European contexts of EU actorness elsewhere (Jokela 2000; 2001). Actor capability is a useful tool when we take a constructivist view to study the European integration. That is to say that we look at the evolution of the EU as a process where increasing number of member states are learning to live with each other. Motivational forces and public support behind the EU deliberately building-up actor capability need to be addressed when studying the evolution desertification issue in the EU integration.

External recognition

External recognition means the ability of an actor effectively to negotiate with other actors in the system. It refers to the acceptance of and interaction with the entity by others (Jupille and Caporaso 1998, 214.). The status of an international actor depends upon recognition and acceptance by other actors. In other words, if the EU is capable of behaving as an actor it must be considered as such.

External recognition is a minimum condition that adds little substantive understanding of any given entity, but simply registers it on the analytical radar. It

has always been the key legal test whereby states and international organisations have been admitted formal participation in the international system. Since the Second World War international organisations have acquired 'objective' legal personality C in other word a status that exists even if denied by the governments of some sovereign states. The European Economic Community was provided with such personality in the Treaty of Rome, along with the right to conclude international agreements in specific areas. Later this right was extended to environmental issues. Thus, the EEC and later its successor EC appears as a signatory of recent multilateral environmental agreements. The European Union, as established by the Maastricht Treaty of 1992, does not have a legal personality in international law. (Jupille and Caporaso 1998, 215; Vogler 1999, 28-32.)

For analytical purposes we should make a difference between *de jure* and *de facto* recognition. *De jure* means the formal dimension, and it involves legal recognition and participation rights. Diplomatic recognition is under international law unproblematically and automatically conferred on states, as it is a definitional component of sovereign statehood. Because it is not a sovereign the EU does not benefit from the norm of automatic recognition. Recognition of the EU by third parties is discretionary, and they have traditionally been reluctant to grant it in full. The EU has high level diplomatic contacts with most countries, but it has not been accorded the same status as sovereign states. Formal membership in international organisations is much of the same as diplomatic recognition. The EU is somewhat opaque to third parties because at any given time it may not be clear whether the Union or its member states are competent to address a given issue or to uphold the responsibilities of membership. (Jupille and Caporaso 1998, 215.)

In environmental diplomacy the EU gradually gained recognition separate from the member states, particularly through the REIO concept that is now a standard element of international environmental conventions. In the 1979 Long Range Transboundary Air Pollution (LRTAP) negotiations Soviet Union initially opposed to any EEC participation but was subsequently prepared to agree to a new formulation whereby it was recognised as a 'Regional Economic Integration Organisation' (REIO). The EU is the only extant example of a REIO provided for in the operation of the various conventions. Having a REIO status has come to mean that the EU can be party to a convention without any individual member state being a party. Within UN organisations and the General Assembly the situation remains ambivalent. Formal recognition reflects underlying political acceptance of the EU as a distinct entity. Vogler argues that over the last ten to fifteen years international conditions have been particularly propitious for the emergence of the EU as an environmental actor. High profile environmental diplomacy culminating in 1992 UNCED provided a stage upon which the European actor was equipped to perform by virtue of its developing environmental competencies. In the diplomatic and NGO communities there is now a widespread acceptance that the EU represents a powerful global actor. For some, it can appear quite capable of using its trade and aid powers in pursuit of its objectives which include the promotion of sustainable development. For the United States, the EU rather than its member states has become the principal partner on international environmental issues. (Jupille and Caporaso 1998, 215-216; Vogler 1999, 28-32, 41-43.)

De facto recognition can result from its instrumentality for third states and from the sociality of global politics. It is a more informal, but highly significant, sense in which actors not only assert their identity but have their identity constructed by the opinions and practices of others. The development of the EU as an international actor in the environmental field also depends upon what other participants are willing to accept. Third parties that decide to interact with the EU implicitly confer recognition upon it. However, the simple production of external effects is not sufficient to satisfy the criterion of recognition. That the completion of the single market might have external effects is less important than that third parties subject to these effects engage the Union in order to discuss, modify, or simply understand them. For many this dynamic is what has driven the emergence of the EU in global politics. The EU's importance as an actor is a consequence as much of its actions as of its legal powers. The huge internal market has made it increasingly difficult to treat the EU as an instrumental international organisation. This is why the third parties have negotiated directly with the EU as an autonomous actor. (Jupille and Caporaso 1998, 215-216; Vogler 1999, 28-32.)

For our purposes, whenever a third party interacts with the Union rather than going to one of the member states, the criterion of recognition has been satisfied. As the EU comes to interact with third states bilaterally, regionally or globally, and as the number and frequency of these contacts increase, a process of socialisation occurs according to which EU activity comes to be accepted and expected. Accordingly the identity is formed or transformed. Wendt and other constructivists emphasise the ways in which actors' identities are mutually constituted, not materially but

socially. The transformative or generative conception of global politics means that actors can be supported or undermined and made or unmade. It is especially here that analytical space opens for consideration of the EU as an actor in global politics.

The EU positions in global desertification politics are negotiated in EU co-ordination meetings, where the member states' delegations and the representatives of the Commission meet, exchange views and decide on the EU positions. Prior to the conference, the member states' representatives have homework to do. They prepare points that are of importance to their government. In the co-ordination meetings the representatives look for common ground. Also, the speeches that the country holding the presidency gives 'on behalf of the European Union' are prepared. These co-ordination meetings take place several times a year and during the Conference of the Parties on daily basis. Actually, during the COP the EU co-ordination starts every morning at 8:30 and when the plenary, Committee of the Whole and the Committee on Science and Technology usually start at 10, the EU co-ordination still continues. Next co-ordination meeting is usually at lunch break at 1 o'clock and often also in the evening, when the informal negotiations taking place in the contact groups require response from the Union.

External recognition depends upon the acceptance of the EU by third parties. In the desertification negotiations it is clear that the EU is one of the key players. In the Western European and the Others Group (WEOG) the other players keenly approach the EU and negotiate with it instead the member states themselves or the EC. Also, the G-77 considers the EU to be a major player. Consultations between the EU presidency and the spokesperson of G-77 are triviality in the negotiations. We could well say that the actorness of the EU is not a problem to the third parties of the desertification negotiations. The European Union is *de facto* recognised as an actor in the global desertification negotiations.

External authority

External authority, in turn, refers to the legal competence to act externally in a given subject matter (Jupille and Caporaso 1998). Competence is the EU term for 'powers'. The location of competence has continually shifted during the life of the EU, subject as it is to complex political wrangling between member states jealous of their sovereignty and a Commission and Parliament eager to extend their reach. (Vogler 1999, 29-30.)

One of the marks of nation statehood is the ability to enter into agreements with other nation states. This ability is shared by the EU even though it is not itself a nation state but a union of fifteen nations each of which continues to express its own sovereignty by pursuing its own foreign relations. When EU and its member states negotiate with other states there is some ambiguity about their relative roles. EU is more than an international organisation established between nations to pursue some prescribed activity without fundamentally ceding any of their sovereign powers. EU institutions are able to adopt legislations which directly binds the member states without further review by national institutions. In the environmental field the extent of the legislation is such that it is now impossible to understand the policy of any member state without understanding EU policy. Member states are no longer entirely free to pursue their own policies, either at home or abroad. European Union is difficult to understand, because it does not fit the simple model of public policy, which is commonly divided into home and foreign affairs.

Because the EU is a creation of the member states, its authority ultimately derives from these states. Initially, exclusive competence for the EU was limited to one or two areas where it was expressly provided in the 1957 Treaty of Rome, notably external trade and agriculture. The Treaty was silent on environmental matters. The EU gained the ability to act in international environmental forums by three means (Jupille and Caporaso 1998, 216-217; Vogler 1999, 30):

First, the areas of the EU's express competence have evolved to take on an environmental component (e.g. commercial policy now include trade-related environmental measures). Second, the European Court of Justice has established a linkage or "parallelism" between the EU's internal and external powers (ERTA). Third, the amendment of the Rome Treaty by the SEA gave the EU express authority to conclude environmental agreements with third countries.

How the EU performs as an actor in an issue area where the legal competence of its institutions is unclear and, furthermore, in a state of flux. Environmental politics represents one such issue area. International commerce is the area in which the EU has the most impressive, and longest, record as the unitary, negotiation party. The basic explanation is the strong formal competence that member governments have conferred on the European Commission in this field more or less from the start. (Sjöstedt 1998, 228-231.)

European Union has endured major changes and challenges. Integration has moved forward and this development has been written down in formal

agreements. However, there are more achievements that can be read in the formal treaties. EU has been able to perform actor behaviour outside the formal treaties. West-European integration has proceeded outside the formal, legally-binding treaties. Idea is that external authority actually exists far earlier that it is confirmed in the agreements. Global pressures and other external influences demand EU to act in conformity. Co-ordination at the global level leads the Union to build up actor capability. Effective external policies require EU to adopt internal sectoral policies to support the global politics.

The EU's external competence is, thus, not a static phenomenon. Therefore, we need to address the dynamics of institutional competence. The 1992 Maastricht Treaty and ensuing intergovernmental conferences of the EU member states illustrate that changes in the competence of EU institutions are the result of formal decisions. This assessment is fully consistent with the realist credo: international organisations are completely controlled by states. An increase in the competence of an international organisation can only occur when it has been accepted by the governments concerned. However, the historical record also indicates that the role and relative influence of the EU institutions may grow over time in an informal way without grandly explicit decisions taken at the intergovernmental conferences. Such informal modification of the competence of the EU institutions has been brought about in the past at least three different ways: institutional consolidation, organisational learning and task expansion. (Sjöstedt 1998, 241-242.)

Institutional Consolidation means that institutions and procedural rules supporting EU external policies and action are often reinforced by being used repeatedly. In this way the EU procedures for conducting bilateral and multilateral trade talks have become routinised and strongly institutionalised through the hundreds of sessions of negotiations with non-member countries in which EU representatives have taken part in recent decades (Sjöstedt 1977; 1998, 242.) *Organisational Learning* represents another type of mechanism that may generate informally produced changes in the EU's capacity for external action (Haas 1990). The experiences of the EU common foreign and security policy indicate that an important learning effect has been institutional and procedural innovation (Sjöstedt 1998, 242-243). *Task Expansion* is a third mechanism for changing the external competence and role of the European Union (Haas 1964). Informal institutional modifications and interaction with third countries have brought new issues, or new issue dimensions, on to the agenda of the EU institutions, contributing to a gradual task expansion (Sjöstedt 1998, 243).

EU as an actor engaged in the global negotiation on climate change in the UN context indicates that external interaction may have a more profound impact than merely on actor behaviour. External interaction may also have an impact on its actor qualities. In a protracted process, as many multilateral negotiations are, a coalition may, for instance develop its actor capability as it continues its engagement in the negotiation. As may be expected the EU's actor capability has been enhanced by rational choices and the formal decisions of national governments; the Maastricht Treaty is an example of this contingency. Member state governments cautiously upgraded the formal competence of the EU institutions to act on behalf of the Union internally as well as externally. (Sjöstedt 1998, 251-252.)

Desertification issue involves mixed competence, where representation is legally shared between Presidency and Commission. Although, the EU positions are decided in the co-ordination meetings and the Presidency is the spokesperson of the Union, in practice, the Commission also participates in the negotiations of COP. The actual representation of the EU is flexible. This dual representation does not seem to be a problem to the EU members or third parties. In practice, in the negotiations it soon becomes clear whom to approach when you want to approach the EU. The institutionalisation of this dual representation represents an innovative way for the EU to be presented while maintaining a central role for the member states. More problematic might the rotation of the precidency C the fact that when each member state holds the presidency for six months, the country that will hold the presidency during the next COP might raise its own profile by bringing new issues to the global agenda without discussing the other member states.

AUTONOMY

Autonomy means the institutional distinctiveness and independence from other actors, particularly the states. Distinctiveness means that to be an actor, in international organisation should have a distinctive institutional apparatus; and independence means that these institutions should make a difference. What matters is whether the EU is an entity, which can have causal importance that is more than the sum of its constituent parts. (Jupille and Caporaso 1998, 217-218.)

Autonomous government of a territory is the basis of statehood, and in order to qualify as international

actors the EU has to exhibit some independence of state authorities. Ascertaining the degree to which the EU represents an entity distinct from its member states presents many difficulties. It is, however, crucial to understand how the EU differs as an actor from other entities in international environmental politics. While the legal competence of the EU is of great importance, it would be an mistake to make an exact equation between exclusive EU competence and autonomy. Independence of the EU is quite clear when we consider the mixed agreements C agreements to which the EU, some or all of the member states, and at least one third actor are parties, but for the execution of which neither the EU nor its member states enjoy full competence. Under such agreements, it is not definitely established ahead of time who acts on which issues. It is often decided on the spot as new issues arise, causing EU members and institutions to engage in a negotiation-within-a-negotiation in order to decide who can address the point in question. (Jupille and Caporaso 1998, 217-218; Vogler 1999, 28, 40.)

EU participation in international negotiations is complex. Most environmental issues involve mixed competence, where representation is legally shared between Presidency and Commission. The Commission, while its is negotiating, continuously consults with a special committee composed of member state's representatives. In practice, member states also participate in the negotiation of the environment agreements. In areas where member states retain jurisdiction, they will negotiate own their own. Given the institutional evolution of the EU, each treaty has had a different dynamic. The actual representation of the EU is more flexible than scholars might predict. The Commission may be asked by the Council to speak for the EU in areas which do not fall within the exclusive competence of the EU while at other times the Presidency may speak even in such areas. When the Presidency speaks for the Union, it will do so using the formula "on behalf of the Union and its member states". (Sbragia 1997, 18-19)

A further potential source of confusion lies in the possibility that competence may shift during the course of negotiation. At the beginning of the process of negotiating the Climate Change Convention there was little EU competence and the Commission was not a formal participant in the intergovernmental negotiating committee. None the less, the EC was a signatory in 1992 and later in negotiations of the Berlin Mandate the Union negotiated "as 16", using the formal fifteen states and the Commission. Competence remained problematic and there was no formal negotiating mandate for the EU (Vogler 1999, 31).

The assessment of the EU actor capability in global environmental politics cannot be undertaken unless we take into account to extent to which it is institutionally distinct from the member states. A real test of the actorness is whether the EU is capable of developing positions which are distinct from the lowest common denominator of the national environmental policies and economic interests of the member states. The EU is the biggest donor in the global desertification politics. The EU has been able to speak with one voice, perhaps, because the member-states do not have as important own interests in the issue as in the other global environmental conventions. Thus, the desertification case is not perhaps the best one to assess the autonomy of the EU's global role. In might be fruitful to evaluate the autonomy of the EU's role in terms of *learning*. In other words, the autonomy of the EU position is evaluated by comparing the initial positions of the members and the end result. What we might see is that the EU position was constructed during the negotiations when the member states learned together what the desertification issue was about, and what they can and should do about it - in other words, how they framed it. Much of international relations theory rests on the assumption that states know what they want. I have argued elsewhere (Jokela 2000) that preferences may not be inherent in states and may not be wedded to material conditions. International normative expectations shape domestic interests and policies, and thus identities of the national actors. States may not always know what they want and they may be receptive to teaching and learning about what are appropriate actions to take. In general, the constructivist approach is almost a necessity due to the fact that state identities and interests are shaped in social processes.

INTERNAL COHESION

Internal cohesion is the ability to identify policy priorities and to formulate coherent policies. A number of structural conditions for the actor capability of the EU are discernable. A first distinction can be made between three main categories of structural prerequisites. A basic requirement is that there exists structures at the systemic level within the Union enabling the formation of a collective political will. Basic formations of this kind are fundamental common interests of the nations or cross-national groupings being part of EU as well as minimum of political and economic resources that can back up, or directly generate Union action. Institutions pertaining to the Union capable of mobilising resources and expressing a common will are also necessary. Thus, structures are

necessary to support decision-making at the Union level in various kinds of situation. Actor capability requires instruments with help of which Union action can be targeted against other actors. Here belongs notably a network of agents (foreign representations of the Union or national government representatives acting in the name of the Union) and a network of transaction channels reaching into the economy or society of other actors.

Even without a policy cohesion, the EU would still make a difference in global politics, judged solely by the standard of its external consequences. This suggests a difference between actorness and presence. A complex international organisation such as the EU can act with varying degrees of cohesion. (Jupille and Caporaso 1998, 218-220.) Presence means that the EU is visible in regional and global fora. 'Presence' was introduced by Allen and Smith (1998) to explain the growing international salience of the EU and to avoid the pitfalls of defining the international activity of an actor that is not a state. They argue that the EU's presence in international scene is significant. Their central argument is that EU is neither a fully-fledged actor nor a purely dependent phenomenon in the international arena. Rather, it is a variable and multidimensional phenomenon, playing an active role in some areas of international interaction and less active in some others. Presence is a feature or quality of the EU, operating to influence the actions and expectations of participants. (Ginsberg 1999, 432; Allen and Smith, 1998.)

Many students have applauded the notion of presence, because the concept avoids both state-centric approaches and traditional concepts of power. The notion gets us off the hook of analysing the EU in terms of sovereignty and supranationalism, which might lead us to suppose that there was in fact no European foreign environmental policy, when common sense and the experience of other states tell us precisely the opposite. (Ginsberg 1999, 448.) Without doubt the EU is present in the global desertification negotiations. The co-ordination meetings represent the system which enables the formation of a collective will. The EU wants to speak with one voice because it wants to be better heard in the global fora. The coherence of its position is dependent on the internal factors, especially the ability of the Presidency to co-ordinate and persuade, and the willingness of the members to participate and make concessions. When the EU is not unanimous it falls silent. The presidency does not speak on behalf of the Union, but the member states speak individually. Thus far the EU has been one of the loudest in the desertification negotiations. Coherence of the EU position is seen in that it has been quite consistent in its policy toward the funding mechanisms of the desertification convention and the evaluation of the implementation of the convention. Also, budgetary issues that are difficult and of great importance have proofed the internal cohesion of the EU as a negotiatior.

Conclusions

The basic purpose of the foregoing discussion has been to describe the European Union as actor in the global desertification politics. The desertification convention originates in the UNCED conference, where the EU highlighted its role in the global environmental politics. Ever since it has been active in the global negotiations. Conclusions of this article may now be summed up in the following seven points: First, actorness in international politics is changing. State borders have blurred. Many powerful non-state actors have gained respect as legitimate actors. In effect, the international system needs to be conceived of as a mixed actor model because the relative significance of the state has been reduced. Thus, it important to study the actorness of the European Union.

Second, although international politics is in part about acting on material incentives, it is also about the reproduction and transformation of the identities and interests. Much of international relations theory rests on the assumption that actors know what they want. If they, however, do not, they may be receptive to teaching and learning about what are appropriate actions to take. In general, the constructivist approach is almost a necessity due to the more than obvious fact that actor identities and interests are shaped in social processes.

Third, the EU positions in global desertification politics are negotiated in EU co-ordination meetings, where the member states' delegations and the representatives of the Commission meet. In the desertification negotiations it is clear that the EU is one of the key players. Other players approach the EU presidency and negotiate with it instead the member states or the EC. The European Union is *de facto* recognised as an actor in the global negotiations.

Fourth, desertification issue involves mixed competence, where representation is shared between presidency and Commission. The actual representation of the EU is flexible. This dual representation does not seem to be a problem to the EU members or third parties. The institutionalisation of the dual representation represents an innovative way for the EU to be presented while maintaining a central role for the member states. Furthermore, the EU is the biggest

donor in the global desertification politics. The EU has been able to speak with one voice, perhaps, because the member-states do not have as important own interests in the issue as in the other global environmental conventions.

Sixth, without doubt the EU is present in the global desertification negotiations. In the co-ordination meetings the collective will is formulated. The EU wants to speak with one voice because it wants to be better heard in the global fora. The coherence of its position is dependent on the internal factors, especially the ability of the Presidency to co-ordinate and persuade, and the willingness of the members to participate and make concessions. When the EU is not unanimous it falls silent.

Finally, the desertification convention has been valid five years. In its lifespan it is be now at a point where results are expected. From the modality discussion one must get forward. The COP-5 succeeded in this. During the repeated negotiations of several years the parties' views get closer and the final result is dependent on the impulses, which have been created during the negotiation process. The issue is not then whether the G-77 won by getting the CRIC required by it in the negotiations, or the industrialised countries lost when they had to give in that. The final result is a consequence of the negotiations and end product resigns distinctly from original starting points of the opposite sides. The result is dependent on the social learning, which has taken place in the negotiations. Lack of leadership is burdening the governance of desertification. Thus, also action by the European Union is needed.

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International Regimes as a Trigger of Policy Diffusion: The Development of Climate Policies in the European Union

by Sebastian Oberthür and Dennis Tänzler***

Policy diffusion is a well-established area of research in the realm of comparative politics (e.g. Walker 1969; Gray 1973; Berry and Berry 1990; for an overview Kern 2000). It has recently gained renewed prominence especially in the area of environmental policy (e.g. Kern et al. 1999; Jänicke 2000). The subject of this research has been the spread of innovative policy instruments across political entities either horizontally (e.g. across nation states) or, more rarely, vertically (e.g. from sub-national units to the national state) (Kern 2000, 33-46). Policy learning through effective communication appears as the central causal mechanism driving processes of policy diffusion (see Rogers 1995, 5; Kern et al. 1999, 13-15). Major explanatory variables applied include the existence of pioneering states, crossing of a threshold of diffusion, the self-dynamics of diffusion and certain conditions of the relevant political units that may be more or less conducive for adopting new policies (e.g. Kern et al. 1999).

International institutions such as international organisations and international agreements and related processes are rarely part of the conceptual framework of analyses of policy diffusion at all. If they are considered, they are mainly thought to fulfil a facilitative function. Thus, international organisations such as the OECD or the World Bank may help spread innovative ideas from one country to another (Kern et al. 1999, 10; Kern 2000, 275). Thus, Richard Rose (1993, 68) has referred to the OECD as an "idea-mongering" international institution in this context. In a similar vein, processes such as the 1992 United Nations Conference on Environment and Development (UNCED) may support and promote the diffusion of certain policy instruments such as national environmental policy plans or sustainable development strategies (Jänicke 2000). The major causal pathway, however, in all these cases leads from one country or state to another, with international institutions figuring as intervening variables at best by primarily influencing the speed of the flow of information.

In the following, we attempt to broaden the conceptual framework of the analysis of policy diffusion by hypothesising that international institutions can play a more substantial role as drivers and triggers of such diffusion processes. They may do so by giving an important impulse to the policy-making at the national (and sub-national) level—short of directly requiring states as their addressees to take specific action, which would represent 'central regulation' (cf. Kern 2000, 31-33). Principally, international institutions may thus drive policy diffusion by either

- increasing the (unspecific) pressure on states/governments to take action in order to be able to comply with their international commitments: such an unspecific 'compliance pull' may increase the willingness of governments to implement innovative policy instruments; and/or
- by providing special incentives to implement particular innovative policy instruments without requiring their adoption.

In the following, we substantiate our hypothesis by investigating the development and spread of selected climate policy instruments in the European Union, i.e. at the EU level and in the EU Member States. To lay the basis, we first describe briefly the development of the international regime on climate change that is based on two international treaties, the 1992 UN Framework Convention on Climate Change and its 1997 Kyoto Protocol. Subsequently, we investigate the diffusion of three climate policy instruments within the EU and its member states: climate policy plans and strategies, emissions trading, and CO_2/ energy taxes. In doing so, we pay particular attention to analysing to what extent and how the diffusion has been influenced by the international climate regime and the Kyoto process in particular. The analysis provides evidence that the international climate regime has indeed had an important influence on the spread of certain climate policy instruments within the EU. The climate regime has thus had significant positive effects already prior to the entry into force of the Kyoto Protocol that is expected to occur in 2002 or 2003—a finding that may be surprising for those who doubt the viability of the international regime (e.g. Victor 2000). More importantly, however, the analysis illustrates that the role of international insti-

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tutions in processes of policy diffusion can go well beyond a purely facilitative and informative function by exerting pressure and providing incentives for governments to adopt innovative policies.

The international regime on climate change

The international regime on climate change is built upon two international treaties, the UN Framework Convention on Climate Change (UNFCCC) of 1992 and its Kyoto Protocol that was adopted in 1997. The UNFCCC was adopted after intense negotiations that started in early 1991 on the basis of the first report of the Intergovernmental Panel on Climate Change (IPCC) of 1990. It established the very foundation of the regime by defining the principles which guide its development (Article 3 FCCC) and its ultimate objective that is to stabilise atmospheric concentrations of greenhouse gases (GHGs) "at a level that would prevent dangerous anthropogenic interference with the climate system" (Article 2 FCCC). It did, however, not contain any concrete obligations to limit or reduce the emissions of GHGs or to implement specific policies and measures to combat climate change (on the UNFCCC see Sands 1992; Bodansky 1993).

GHG emission limitation and reduction commitments were subsequently established for industrialised countries in the Kyoto Protocol of 1997. These differentiated commitments shall amount to an overall reduction of industrialised countries' GHG emissions of at least 5% from 1990 levels by 2008-2012. The commitments cover six GHGs and groups of GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF_6). The last three are also referred to as the 'fluorinated GHGs'. The Protocol furthermore establishes three innovative 'flexible mechanisms' that allow countries to meet their emission obligations by acquiring emission credits from abroad. An emissions trading system may be used by industrialised countries with excess emission allowances to transfer them to other industrialised countries in need of such allowances (Article 17 of the Protocol). Under the so-called 'project-based mechanisms'—'Joint Implementation' (JI) according to Article 6 and the Clean Development Mechanism (CDM) according to Article 12 of the Protocol- an investor and a host country can generate additional emission reductions by implementing a suitable project jointly, with the investor receiving (part of) the resulting emission credits. The investor in both JI and CDM projects would be from an industrialised country. Other industrialised countries would act as hosts of JI projects, whereas CDM projects would be implemented in developing countries (on the Kyoto Protocol see in general Oberthür and Ott 1999; Grubb et al. 1999).

The Kyoto Protocol was the result more than 2 ½ years of negotiations. Parties to the UNFCCC at their first conference in Berlin in March/April 1995 agreed in the so-called Berlin Mandate to elaborate a legal instrument with quantified emission limitation and reduction commitments for industrialised countries for adoption at their third conference in 1997. An intensive negotiating process ensued that eventually resulted in the adoption of the Kyoto Protocol in December 1997 (see on the negotiating process Oberthür and Ott 1999, ch. 4-7).

Although the Berlin Mandate also foresaw agreement on binding obligations to implement specific policies and measures and the EU adamantly pursued this goal in the negotiations, no such policies and measures are mandated in the Kyoto Protocol (due to resistance by other countries). The Kyoto Protocol's relevant Article 2 only provides a basis for pursuing a 'soft' learning approach within the framework of the regime (see Oberthür and Ott 1999, ch. 10), which has been pursued by means of workshops on "good practice" (e.g. UN Doc. FCCC/SBSTA/2001/INF.5). Both the UNFCCC and the Kyoto Protocol oblige their parties in virtually the same words to "formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change" (Art. 10(b) of the Protocol and Art. 4.1(b) of the UNFCCC). However, this obligation remains unspecific and vague (e.g. no deadline is specified) and therefore hardly constitutes a 'hard' legal obligation.

The Kyoto Protocol represented 'unfinished business' (Ott 1998). Several of its provisions needed elaboration before the industrialised countries could assess exactly their obligations under the Protocol. Most importantly, detailed rules and guidelines regarding the flexible mechanisms and so-called 'sinks' of GHGs (inter alia, forests) to offset GHG emissions remained to be determined. In addition, the provisions on monitoring, reporting and review as well as a system to respond to cases of non-compliance needed to be fleshed out. Also, additional financial assistance for developing countries became part of the post-Kyoto negotiations. In 1998, Parties agreed to settle these open issues by their sixth conference in 2000. Agreement could, however, only be reached in 2001 (Sach and Reese 2002; Bail et al. 2002).

Because of the uncertainties surrounding the actual

meaning of the Kyoto Protocol, industrialised countries did not start ratifying the treaty prior to 2001. However, already since Kyoto, and even since the Berlin Mandate that already foresaw legally binding commitments to limit GHG emissions, the writing had been on the wall: countries would be required to take action to mitigate their GHG emissions. After the international agreement reached in 2001, most industrialised countries have advanced their ratification procedures and the Protocol is expected to enter into force in 2002 or 2003 (Bail et al. 2002). Notably, the prospective parties to the Kyoto Protocol do not include the US, since the new US President Bush in March 2001 decided not to ratify the Kyoto Protocol, declaring that it was "fatally flawed" (see Ott 2001).

The EC is a Party to the FCCC and has signed the Kyoto Protocol. The EC and its member states have a reduction commitment of minus 8% under the Protocol. The Protocol's Article 4 allows the EC member states to redistribute their commitments in an internal agreement that is to be notified to the UNFCCC Secretariat at the time of ratification. Political agreement on such a 'burden sharing' was reached in 1998 and resulted in commitments ranging from plus 27% (Portugal) to minus 28% (Luxembourg) (Oberthür and Ott 1999, ch. 12). The EU and its member states have declared their intention to ratify the Kyoto Protocol prior to the World Summit on Sustainable Development in Johannesburg in August/September 2002 (European Commission 2001; see also Sach/Reese 2002). The EU Council of Ministers is expected to pass the relevant Decision, which will also codify in legally binding way the burden-sharing agreement of 1998, in March 2002.

The diffusion of climate policies in Europe: Plans, Emissions Trading, CO_2/energy taxation

This section examines the diffusion of three climate policy instruments within the EU since the early 1990s: (1) climate protection plans or strategies, (2) emissions trading, and (3) CO_2/energy eco-taxes. As we have seen in the previous section, neither of these instruments is explicitly called for in the international agreements on climate change. Our hypothesis is that the international climate regime and the Kyoto Protocol in particular have nevertheless driven, or at least contributed decisively to, the diffusion of these policy instruments. In each case, we therefore correlate the diffusion process with the international political process. We subsequently examine the evidence/arguments in support of or potentially invalidating our hypothesis. In this respect, particular attention is paid to analysing to what extent the diffusion can be understood and explained without reference to the international regime and with reference to potential alternative explanations. A fuller analysis would ideally investigate the respective domestic political processes in order to identify how and why the three policy instruments analysed were introduced. Any such analysis is, however, beyond the scope of this article.

CLIMATE PROTECTION PLANS AND STRATEGIES

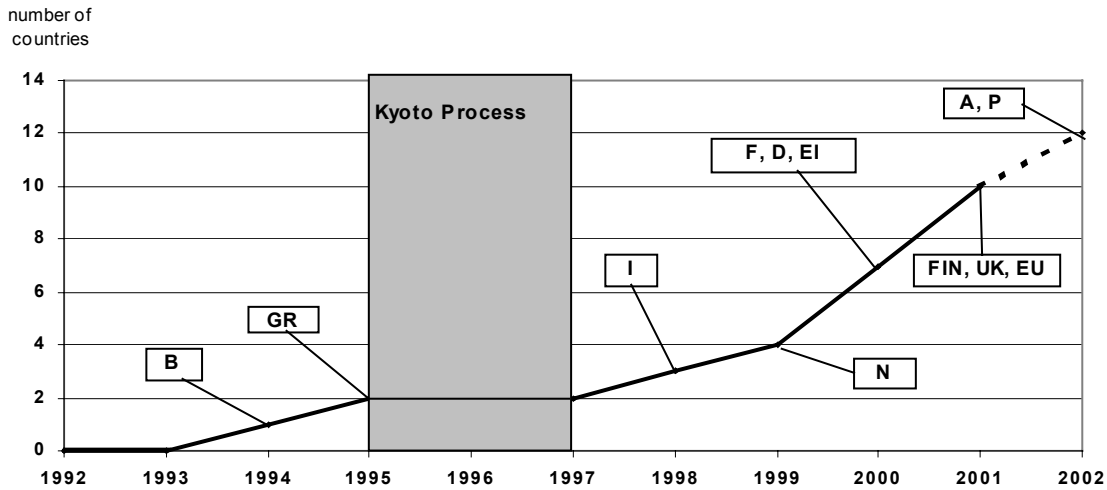

Figure 1: The Adoption of Climate Protection Plans in the EU (Source: see Annex 1 and references)

Plans and strategies in environmental policy have already been the subject of research on policy diffusion in another context: Martin Jänicke and Helge Jörgens have analysed the diffusion of "national environmental plans" following the adoption of Agenda 21 at the Rio Earth Summit in 1992, which calls in its chapter 8 for the elaboration of such plans

(Jänicke and Jörgens 1998, 28, 36; Jänicke and Jörgens 2000) In the policy area of climate change, countries have increasingly elaborated other "plans" or "strategies" specifically aiming at climate protection. The diffusion of these climate protection plans or strategies has received far less attention to date.

Figure 1 illustrates the diffusion of climate protection plans in the EU and its member states until 2001. These plans (whether called plans, programmes, strategies or guidelines) share the following characteristics: (1) they provide for an integrated approach towards achieving a national emission target by (2) including a selection of policies and measures to be implemented to achieve this target (3) in a variety of sectors or taking into account developments in a variety of relevant sectors in an integrated way, and (4) it has become official government policy by being formally adopted or approved as such (in contrast to any plan that may have been approved by the environment ministry only).[184]

Nine of the 15 EU member states and the EU itself had adopted such a plan by 2001. In addition, two member states (Portugal and Austria) had elaborated but not yet adopted climate protection plans. In Spain, discussions on taking a similar step had started. Eight of the 10 existing plans were adopted between 1998 and 2001, with the remaining two dating from 1994 (Belgium) and 1995 (Greece). The EU itself adopted a programme for the elaboration of suitable policies and measures to mitigate climate change in 2000—the European Climate Change Programme, ECCP) which led to first results and thus a plan for the adoption of first measures in 2001 (European Commission 2000; 2001a).

Some of these plans followed up on earlier related activities. For example, the German climate protection programme of 2000 built upon the work of an inter-ministerial working group "CO_2 Reduction" established in 1990 to identify policies and measures for reducing energy-related CO_2 emissions by 25 to 30% from their 1987 levels by 2005 (Loske 1997, 283-290). Similarly, the Dutch climate protection plan was developed on the basis of previous work such as the National Environmental Policy Plan 2 (NEPP 2) of 1993 or the CO_2 Reduction Plan of 1996—the so-called '750 million letter' from the Government (Ministry of Economic Affairs) to Parliament (for an overview, see Netherlands 1997, chap. 4). In the case of Italy, the Inter-ministerial Committee for Economic Planning (CIPE) adopted a first planning instrument in 1994 that was confined to a number of energy efficiency measures. Only the National Plan of 1998 elaborated on inter-sectoral policies and measures needed to achieve the Italian Kyoto target with a view to integrating them in a common strategy (see for an analysis Montini 2000, 10-13). Neither of the preceding policy planning instruments constituted a full-blown plan as defined above yet.

The chronology of events supports the interpretation that the Kyoto process and thus the international regime provided a major rationale for the elaboration and adoption of climate protection plans within the EU. The majority of the plans was adopted after the conclusion of the Kyoto Protocol in late 1997, the implementation of which requires the elaboration of a strategy including concrete policies and measures (without prescribing its contents). Formally. the EU and its member states were not yet required to implement the Protocol, since its entry into force was still uncertain. However, the EU was committed to bringing the Protocol into effect and preparing for implementation by elaborating a climate protection plan thus constituted a rational response to the international developments (see section 2 above).

The time lag between the adoption of the Protocol and the adoption of the climate protection plans may be easily explained by the time needed to elaborate such a plan, which can be estimated at 1-2 years on average. In that respect, the Italian plan of 1998 can even be assessed as being rather early—also taking into account that the EU agreed on the final internal distribution of its reduction commitment under the Kyoto Protocol among its member states only in June 1998. Nevertheless, such an early elaboration of a plan is compatible with the hypothesis that it was driven by the Koto process for two reasons. First, the writing that emissions would have to be reduced had been on the wall already since 1995, when negotiations on the Kyoto Protocol started. Second, the EU member states had already in March 1997, during the international negotiations on the Protocol, agreed on a preliminary burden-sharing (amounting to an overall reduction of 9.2%). The Italian commitment under both burden-sharing agreements 1999; Oberthür and Ott 1999, 147-149).

Disregarding the international process, the spread of climate protection programmes within the EU as depicted in Figure 1 may easily be interpreted as a process of 'horizontal diffusion': In such a conceptual framework, building upon the experiences gained in

[184] The following analysis is based upon an evaluation of the various national climate protection plans as of the end of 2001; further information was gathered from most recent member states' 'national communications' to the Climate Change Secretariat under the UNFCCC (available at <www.unfccc.int>), for the national climate protection plans see reference section.

some pioneer countries (Belgium, Greece) others followed suit until a critical mass was achieved. However, such an interpretation would have to come to grips with several particularities. First, after the first movers, the second waive of plans occurred focused on a few years following the Kyoto conference. Second, the plans of this later waive generally refer to the emission targets as contained in the Kyoto Protocol and modified in the EU burden-sharing agreement of 1998. Finally, the climate protection programmes principally give Kyoto as a major rationale. A simple model of horizontal diffusion is therefore be insufficient for explaining and understanding fully the diffusion process.

It is also difficult to argue that the adoption of climate protection plans followed a model of 'forced diffusion' following central regulation (Kern 2000, 33) or that the international climate regime fulfilled a similar function as the Agenda 21 process for the diffusion of national environmental plans (Kern et al. 1999, 21). Neither the UNFCCC nor the Kyoto Protocol establish a hard, legally binding commitment to elaborate and adopt such a plan. The language that they do contain on the elaboration of policy plans, however, is nearly identical in both legal instruments (see section 2 above). Any attempt to explain the diffusion of climate protection plans as being forced by means of the international commitment (i.e. as "forced" diffusion) would therefore have to clarify why such plans were elaborated following Kyoto but not following the adoption of the UNFCCC in 1992 (since the preparation of such a plan can hardly be assumed to require six years and more). If the Kyoto Protocol had forced the elaboration of climate protection plans, then already the UNFCCC of 1992 should have done so because the relevant provisions in both treaties are equivalent.

In the cases where full-blown climate protection plans built upon earlier planning efforts (see above), the development may be interpreted as resulting from a self-dynamic and a learning process in which governments came to accept that such a more encompassing planning instrument was needed (given the weaknesses of the earlier attempts). Any such any such interpretation would have to explain why these countries felt inclined to further develop their plans, why they perceived a need therefore. Given that Kyoto provides the major reference point in the existing plans, it is difficult and even implausible to design such an explanation without accepting a major influence of the Kyoto process. Besides, such an alternative explanation is hardly suitable for explaining why the other countries that had not gone through similar preparatory stages nevertheless elaborated similar plans.

Overall, the balance of evidence strongly suggests that the Kyoto Protocol and thus the international climate regime was a decisive force driving the diffusion of climate protection plans throughout the EU. Even though entry into force of the Protocol was not ensured yet, governments could anticipate and expect that they would be obliged internationally to curb their GHG emissions; they were acting on the assumption that the Kyoto Protocol would eventually need to be implemented. This unspecific 'compliance pull' of the Protocol can thus be said to have triggered to a large extent the spread of this policy instrument within the EU.

EMISSIONS TRADING

Emissions trading as a policy instrument to combat climate change has its roots largely in the US. The US had gained experience with this instrument in particular with its national SO_2 emissions trading programme that it had implemented already in 1992 as a major component of its strategy to combat "classical" air pollution. By and large, this experience has been evaluated to have been positive: Emissions were reduced in excess of the actual requirements and the overall costs turned out to be much lower than anticipated (see Dudek et al. 1997; Ellermann et al. 1999; Aulisi et al. 2000). Consequently, it was the US that introduced the concept into the international negotiations and was the major driving force advocating the establishment of an international emissions trading scheme as part of the Kyoto Protocol (Grubb et al. 1999, 128-131; Oberthür and Ott 1999, ch. 15).

In contrast, the EU has traditionally had far more limited experience with the concept of emissions trading (for some examples see Klaasen 1999). It has generally relied more heavily on command and control regulation while market instruments have only relatively recently made headway in EU environmental policies (Clinch 1999, 6). Consequently, the EU and its member states remained reserved, sceptical or even hostile vis-à-vis the concept of emissions trading in the Kyoto process (Victor 2001, 5). As a result, the EU only agreed to the introduction of emissions trading into the Kyoto Protocol in exchange for a stronger outcome on the literal emission targets (Grubb et al. 1999, 94).

The EU thereby exploited the major rationale of the concept of emissions trading. Such trading is meant to provide geographical flexibility: Emissions reductions do not necessarily need to occur by taking action in a certain country (or firm), but can be implemented wherever they can be achieved at lowest cost.

In permit trading systems, the overall amount of available permits is generally capped. Assuming a certain limit of emissions, the costs of achieving the target should be minimised by granting such geographical flexibility. At the same time, assuming that a certain amount of resources is generally available for emission abatement, higher emission reductions should be achievable with than without emissions trading.

After protracted negotiations, the concept of emissions trading found its way into the Kyoto Protocol in its Articles 3 and 17. However, as a result of the political stand-off on the issue between industrialised and developing countries, these provisions only provided a skeleton for an emissions trading system, only "the bare minimum of enabling language" (Grubb et al. 1999, 129). Subsequently, more detailed rules were agreed in 2001 at the seventh Conference of the Parties to the UNFCCC (see Graichen and Harders 2002). In any event, emissions trading from the beginning was a voluntary instrument: Article 17 of the Kyoto Protocol determines that industrialised countries "may" participate in emissions trading. No country is therefore legally required to use this mechanism, even less so to establish a *domestic* emissions trading system. A country could well pursue its emission targets under the Protocol without participating in international emissions trading. Alternatively, the government of a country may buy or sell emission allowances without establishing a domestic emissions trading system in which sub-national actors would participate.

The international trading system creates, however, an incentive for establishing domestic trading systems as well. Thus, if the logic of emissions trading—geographical flexibility and cost reductions—is accepted internationally, there should be little reason why such a system should not also lead to greater efficiency nationally. Furthermore, establishing a domestic emission trading system should lead to greater compatibility of and coherence between international and national regulatory systems so as to maximise synergies. The further rules on international emissions trading under the Kyoto Protocol agreed in 2001 aim at such synergies by providing for sub-national actors to participate—presumably as the major agents—in such emission trading (Graichen and Harders 2002; Decision 18/CP.7, para. 5 in UN Doc FCCC/CP/2001/13/Add.2). As the Kyoto Protocol's rules thus appear to rest on the assumption that international emissions trading will eventually be built upon corresponding domestic systems, competition arises as an issue since cost reduction are expected from the introduction of such systems. Finally, early movers can be expected to gain additional benefits by acquiring expertise in running and administrating emissions trading systems that are expected to provide new business opportunities (brokers, exchange markets, other services) (OECD 1992; UNCTAD 1995; OECD 1998).

Despite the EU's original scepticism and opposition against GHG emissions trading, the concept gained support within the Union following the adoption of the Kyoto Protocol driven by the aforementioned forces. Serious discussions on and preparations for establishing domestic emissions trading systems started in several member states in the second half of the 1990s (Hasselknippe and Høibye 2001). Denmark passed a plan for national emissions trading for the electric power industry in 1999 (Danish Parliament 1999), which entered into force in 2001 (Hasselknippe and Høibye 2001, 20, for an analysis see Pedersen 2000). The leader among EU member states can nevertheless be said to be the UK, where the design of a domestic emissions trading system had been discussed intensely since the end of the 1990s (Lord Marshall 1998; United Kingdom 2000; 2001).

The domestic UK debate provides clear anecdotal reference for the impact of the Kyoto Protocol. Thus a task force established in March 1998 under the lead of Lord Marshall concluded in its final report of November 1998 "The issue over tradable permits is not so much *whether* they have a role in helping the UK to meet its targets as *how much* and *when*. Trading is already on its way. A system of international greenhouse gas emissions trading is provided for in the Kyoto Protocol" (Lord Marshall 1998, 11). A business-led initiative was recommended to design a "dry run pilot" domestic trading scheme for GHG emissions. Consequently, the UK Emissions Trading Group was set up in June 1999 to take forward the design of a UK scheme. An emissions trading system then became part of the UK's climate change programme of 2001 (UK 2000, 8; UK 2001; 2001a). Emissions trading is complementary to the UK 's climate change levy and is planned to receive government support of £ 30 million in the fiscal year 2003—2004 (UK 2001, for an early analysis see Rees and Evers 2000).

In addition, concrete preparatory work for establishing domestic emissions trading systems has, inter alia, been undertaken in the Netherlands, Sweden and Ireland (Netherlands 2001, Sweden 2001, Ireland 2000). In other member states, discussions on different design options and approaches have been

started.[185] That these preparatory activities have not yet resulted in the establishment of further domestic emissions trading schemes within the EU is also be due to the fact that member states such as Ireland (2000, 27) wanted to ensure the compatibility of their domestic systems with relevant international and EU rules. They therefore explicitly decided to wait for the outcome of the related legislative activities at the international and EU levels before finalising the design of their domestic emissions trading schemes.

Most importantly, discussions on setting up an EU system of GHG emissions trading have advanced at high speed since the Commission first stated in 1998 that "the Community could set up its own internal trading scheme by 2005" (European Commission 1998, 20). After initial work had been carried out in 1999 (CCAP 1999; FIELD 2000), the European Commission presented a "Green Paper" on a harmonised EU-wide emissions trading scheme to initiate the European discussion, including multi-stakeholder participation (COM(2000) 87). In October 2001, the European Commission then presented a proposal for an EC Directive on an EU-wide emission trading scheme (COM(2001) 581final). Accordingly, the EU would establish the pilot phase of such a scheme in 2005, followed by a full-blown system that would become operational in 2008 (i.e. from the beginning of the commitment period 2008-2012 of the Kyoto Protocol). The draft Directive is currently under consideration by the Council and the European Parliament. Pending resolution of a number of political issues, the Directive could be passed in late 2002 or in 2003.

As is obvious from this history, the EU and its member states have undertaken a reassessment of their interest in and position on GHG emissions trading after Kyoto. Observers of and participants in this reassessment process generally agree that the Kyoto Protocol process was decisive in bringing this change about. Because of the Kyoto Protocol, governments accepted that emissions trading had become a reality. As one element of the international process, a large number of side-events examining various aspects of emissions trading were held at the international negotiating sessions and an uncounted number of studies analysing various design options and their implications were undertaken and published (e.g. OECD 1998). Through their involvement in the detailed international discussions, governments got familiar with and attached to the general concept. After all, the considerable effort spent in designing the international system was not to be invested for nothing. It inescapably led to an internalisation and increasing 'ownership' of the concept of emissions trading in domestic political systems.[186]

Overall, the Kyoto process has thus triggered a learning process about the concept of emissions trading, enhanced its general acceptance and provided special incentives for its implementation in the EU. It thus has been a decisive force driving the diffusion of the concept of emissions trading and its implementation in the EU and its member states. Given the history of the European discussion and previous widespread opposition to the concept, there is hardly any plausible alternative explanation available.

Interestingly, the diffusion mechanism in this case originally involved a transfer from the US as the major proponent of the emissions trading concept to other parts of the world, in particular Europe, through an international institution. On this basis, the spread of the emissions trading concept throughout Europe may have been interpreted as a simple expression of US hegemony or as a horizontal diffusion process, employing an international institution as the vehicle and as a facilitator. However, such an interpretation fails to explain the continued drive towards emissions trading in Europe after the official rejection of the Kyoto Protocol and the refusal to participate actively in the international discussions by US President Bush in early 2001. It is therefore the international regime in which the emissions trading concept is enshrined that drives the diffusion process. As a result, the EU may paradoxically become the frontrunner in developing the concept (gaining various first-mover advantages) from which the US and others may learn and to which they may have to adapt in the future (Legge and Egenhofer 2001).

CO_2/ENERGY TAXATION

CO_2/energy taxes represent a certain type of environmental taxes or "eco-taxes". Eco-taxes are used to internalise external costs of the use of natural resources. CO_2/energy taxes aim at reducing the emission of greenhouse gases—either directly or indirectly through a reduction of energy consumption. In contrast to a system of tradable emission permits, eco-taxes or charges do not require setting an absolute cap on emission. They also do not ensure achieving a certain environmental standard (e.g. certain emission standards) or objective (e.g. stabilisation of GHG concentrations in the atmosphere at a certain level).

[185] For example, in Germany a "Working Group Emissions Trading for Combating the Greenhouse Effect" was initiated by the Ministry for the Environment (Germany 2000, 141; see also AG Emissionshandel 2001).

[186] Author's own observation as observer of and participant in various EU-internal discussions (Sebastian Oberthür).

Thus, the policy instrument of taxation also is different from command and control instruments (see for a general discussion on different policy instruments Windhoff-Heritier 1987, ch. 1).

The Kyoto Protocol does not call for the implementation of a CO_2/energy tax or indeed of any eco-tax. As mentioned in section 2 above, despite attempts to push for agreement on legally binding policies and measures in the negotiations, the Protocol eventually left the choice of the means of how a country wants to implement its emission target up to that country. As in the case of climate change plans (see section 3.1 above), the Protocol's mandatory, binding emission targets do, however, create unspecific pressure to implement effective policies and measures to mitigate climate change and abide by these targets ('compliance pull').

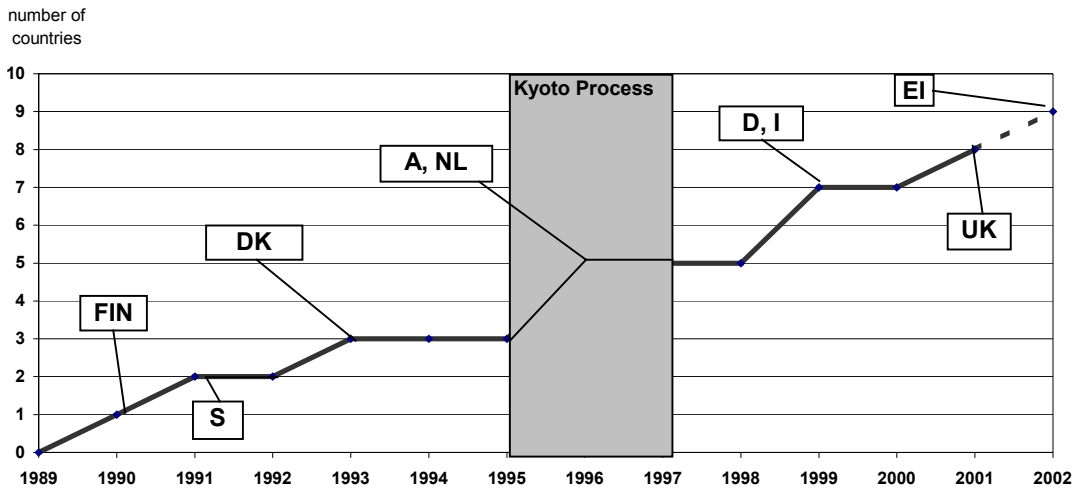

Figure 2: The Introduction of CO_2/Energy Taxes in the EU and Its Member States (Source: see Annex 1 and references)

Taxation of CO_2/energy has diffused at moderate pace throughout the EU since the beginning of the 1990s (see Figure 2).[187] In 1990/1991, this policy instrument was first introduced by the Nordic member states. The diffusion process has gained additional momentum since the second half of the 1990s. Since 1995, five member states have newly introduced CO_2/energy taxes. Whereas small member states were the first movers and innovators, the bigger member states Germany and the UK followed in 1999 and 2001 respectively. The introduction of CO_2/energy taxation in France in 2001 was only prevented, when the tax plan was ruled unconstitutional by the French constitutional court (ENDS Daily, 3 January 2001). In addition, Ireland has announced its intention to introduce a greenhouse gas tax in 2002 (Ireland 2000, 4). Overall, eight out of 15 EU member states had introduced CO_2/energy taxes by the end of 2001.

EU-wide harmonised energy and/or CO_2 taxation has been under discussion for more than 10 years. Since the early 1990s, the debate has shifted from an early proposal by the European Commission to introduce a combined CO_2/energy tax to consideration of a broadened framework for harmonising tax levels for energy products. Accordingly, minimum tax levels would be defined for virtually all energy products including oil, gas and coal.[188] However, none of these proposals has received the unanimous support by EU member states required for adoption of any regulation of energy taxation so far. The harmonisation of minimum tax levels has continued to meet with resistance by some Southern EU member states in particular (especially Spain), but remains on the agenda of EU policy-makers. It has gained renewed attention in the wake of the discussion on the implementation of the Kyoto Protocol. For example, the European Council in its conclusions on climate change and the Kyoto Protocol in June 1999 stressed the need for "an appropriate framework for energy taxation"(European Council 1999, para. 31).

[187] See also Jänicke et al. 1998; Kern et al. 1999: 23; for a comprehensive analysis of eco-taxes in general in several European states see Schlegelmilch 1999; 1999a; Speck/Ekins 2000.

[188] For the most recent so-called "Monti proposal" see COM(1997) 30 final; for accounts of the debate on CO2/energy taxation within the EU see Collier 1996; Schlegelmilch 1999a, 18-20.

The diffusion of CO_2/energy taxes within the EU can thus be interpreted as being at least partially driven by the international climate change regime. Even the first movers on the issue in the EU may be said to have introduced such a tax partially motivated by the rise of the climate change issue on the international political agenda at the end of the 1980s and the beginning of the 1990s. With the Kyoto Protocol appearing on the agenda of the international negotiations in the mid-1990s and in particular with its adoption in late 1997, the incentive and pressure for EU member states to introduce CO_2/energy taxes increased, since governments could see the international obligations on the horizon. Consequently, the number of EU member states having implemented such a tax has steadily risen since the mid-1990s (see Figure 2).

However, a number of factors other than the international climate change regime can plausibly be referred to for explaining the diffusion of this policy instrument. Thus, the newly introduced taxes on various occasions were mainly raised by adding an increment to already existing taxes on fossil fuels/mineral oils. Rather than constituting eco-taxes they may thus be considered simple instruments for raising tax revenues sailing under a green climate flag. In some cases, such as in the case of the German eco-tax introduced in 1998/99 an important motivation has been to lower the tax burden on labour by recycling the income from the indirect taxation of the use of natural resources and the environment. Finally, in cases such as Germany, the introduction of CO_2/energy taxation may more easily be explained by reference to a change in government, and in particular the coming into power of the green party, which occurred in Germany in 1998.

Notwithstanding these limitations, the international climate change regime and the Kyoto Protocol in particular provided a major argument in the domestic debates about the introduction of CO_2/energy taxes in the respective EU member states. For example, the climate change plans of both Ireland and Germany give the GHG emission reduction commitment under the Kyoto Protocol as a major rationale for introducing eco-taxes. Overall, however, claiming that the climate change regime was decisive for the spread of CO_2/energy taxation in the EU in the 1990s would mean to over-stretch the case. The Kyoto Protocol represented only one of several factors driving the diffusion of CO_2/energy taxes within the EU. The other factors indicated appear to have been more decisive on average and in several, if not all cases may have led to the introduction of such taxes even in the absence of the Kyoto Protocol.

Conclusions

The study of policy diffusion has so far focused on national systems arguing that the spread of innovative policies in various cases results from policy learning across space. International institutions appear to have had at best a facilitative function in this framework. This article has attempted to contribute to bridging the gap between research focusing on horizontal processes of policy diffusion and the analysis of international institutions. In particular, it has investigating the role of international institutions in processes of policy diffusion—a blind spot in many analyses of horizontal diffusion processes thus far.

Analysing the spread of three instruments of climate policy (climate change plans, emissions trading, CO_2/energy taxes) within the EU and its member states against the backdrop of the evolution of the international regime on climate change provides evidence for the potential of international institutions to act as a driver of policy diffusion (rather than as a facilitator). Neglecting international institutions, the cases presented may easily be interpreted inadequately as processes of 'simple' horizontal policy diffusion. In contrast, an adequate understanding of these processes requires taking account of the influential role of international institutions.

In the cases investigated, the international institution drove policy diffusion in at least two different ways. First, the international climate change regime exerted unspecific pressure on national actors, and were used by these as powerful support, to take effective action to fulfil international commitments (unspecific "compliance pull"). While not requiring any specific policy instrument to be implemented, such pressure can drive the spread of policy instruments (such as climate change plans). Second, the regime created significant incentives to implement the innovative policy instrument of emissions trading (without requiring its implementation). As a result of such incentives and a learning process advanced by related international discussions on innovative concepts, international institutions can contribute to actors' reassessing and changing their preferences in this respect (e.g. emissions trading).

In terms of the conceptual framework of policy diffusion, the first case exemplified by the spread of climate change plans across the EU represents horizontal policy diffusion under the shadow of and driven by international regulation (short of central, hierarchical regulation). The diffusion of the concept of emissions trading within the EU, in contrast, may best be understood as a case of "top-down diffusion" (possible mixed with a horizontal dynamic) that has

been found to be rare in federal systems (see Kern 2000, 43). The case of emissions trading may not be unique in this respect, since the Kyoto Protocol contains further innovative flexible mechanisms (Joint Implementation, Clean Development Mechanism) the use of which is not legally required but promises specific benefits. Similar incentive structures may exist in the context of other international institutions.

While international institutions do have the potential to drive processes of policy diffusion, they may not necessarily do so in all cases where this may be plausible or in all such cases to the same extent. The analysis of the spread of CO_2/energy taxes across the EU provides evidence that this policy may have diffused even in the absence of the international regime on climate change. The contribution of the international institution in this case was significant but moderate (and probably not decisive), and less intense than in the case of climate change plans and emissions trading.

As the cases investigated indicate, international institutions may exert influence and drive processes of policy diffusion already prior to the entry into force of their respective provisions. Thus, the Kyoto Protocol has driven the spread of emissions trading schemes and the elaboration of climate change plans in the EU before its provisions acquired legally binding force—on the basis of the expectation that entry into force was likely to occur eventually. Such a "hurrying obedience" (or, in our context, a hurrying response) of governments vis-à-vis international regulation is in line with previous findings of research into the effects of international institutions (see, e.g., Oberthür 1997). Despite various predictions of doom for the Kyoto Protocol (e.g. Victor 2001), it thus has had noticeable positive effects on the development of climate policies in a significant part of the industrialised world already.

Annex 1: Climate Protection Plans, Emission Trading, CO_2/energy taxes: Status of the development within the EU (as of the end of 2001)

Country	Climate Protection Plans:	Emission Trading	CO_2/Energy Taxes
Austria	"Austrian Climate Strategy 2010" proposed 2001, adoption foreseen in 2002. (Austria 2001, 6)	ongoing work, study published 2000, design depends on the future EU trading scheme. (Austria 2001, 81)	introduced 1996 (Austria 2001, 80)
Belgium	"The National CO_2 Programme" 1994 (Belgium 1994)	–	–
Denmark	–	adopted in 1999, introduced in 2001 (DEA 2001)	introduced 1993 (Denmark 2000: 51)
Finland	"National Climate Change Strategy" 2001 (Finland 2001: 13)	–	introduced 1990 (Finland 2001: 100)
France	"Programme national de lutte contre le changement climatique" 2000 (France 2000)	–	–
Germany	"National Climate Change Programme" 2000 (Germany 2000)	working group set up in 2000 (Germany 2000, 141)	introduced 1999 (Germany 2000, 36-37)
Greece	"Climate Change—The Greek Action Plan for the Abatement of CO2 and Other Greenhouse Gas Emissions" 1995 (Greece 1997:1)	–	–
Ireland	"National Climate Change Strategy" 2000 (Ireland 2000)	advisory group set up 1998: participation in the EU and international trading scheme intended (Ireland 2000, 4)	GHG taxation framework announced for 2002 (Ireland 2000, 4)
Italy	"National Plan for the Reduction of GHG emissions" 1998 (Montini 2000)		introduced 1999 (Speck/ Ekins 2000, 11)
Luxembourg	–	–	–
Netherlands	"National Climate Policy Implementation	Commission appointed in 2000	introduced 1996 (Netherlands

	Plan" 1999 (Netherlands 2001, 52)	(Netherlands 2001, 63-64)	2001, 50)
Portugal	"Programa Nacional para as Alterações Climáticas" proposed 2001, adoption foreseen in 2002 (ENDS daily, 19 December 2001)	–	–
Spain	–	–	–
Sweden	–	–	introduced 1991, reforms in 1993, and 1996 (Sweden 2001, 13)
UK	"UK Climate Change Programme" 2001 (UK 2001a)	announced 2001; entry into force is scheduled for 2002 (UK 2000)	introduction 2001 (UK 2001a, 72)
EU	"European Climate Change Programme" 2001 (European Commission 2001)	announced in 2001, entry into force 2005 (European Commission 2001a)	–

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Implementation of Integrated Sustainability Strategies in Europe: Multi-level Participation and Conflict Management in Climate and Biodiversity Regimes

by Jürgen Scheffran and Susanne Stoll-Kleemann***

"It is the people, indeed, who feel the need for sustainability."
(European Consultative Forum 2001a)

Sustainable development can be regarded as a continued process of integrating the man-made sphere (sociosphere) into the limited framework of the natural environment (ecosphere). Human and social dimensions are an essential element in the definition of the Brundtland Report (World Commission 1987) as well as in the 1992 Rio declaration and in Agenda 21. However, established sustainability strategies often neglect the complex nature-society interaction, leading to conceptual and operational deficits. Integrated sustainability concepts would combine the dynamics in both ecosphere and sociosphere to analyse conditions for their adaptation, compatibility and conflict resolution.

The need for integrated sustainability strategies Integration of European sustainability strategies places complex demands on the management capabilities with several overlapping dimensions:

1. The European Union acts vertically upon and is affected by a wide range of *geopolitical levels*, including local, community-based levels, national governments and the global sphere.
2. Both *natural and social capital* are affected by unsustainable resource use as well as the implementation of sustainability strategies.
3. The EU plays a key role in managing and mediating conflicts among different interests, geopolitical levels and forms of capital to facilitate the *transition from conflict to co-operation.*

A precondition for understanding the impact of sustainability strategies is to identify the major factors of environmental change that can be influenced. As a framework we extend the Kaya identity which modifies the famous IPAT formula by Ehrlich/Holdren and establishes a relationship between socio-economic drivers of human impact on environmental change (Nakicenovic 1997, 273; Edenhofer 2001).

The parameters can be influenced by different sustainability strategies to minimise adverse impact (see Figure 1). For each factor the strategies integrate those with a scientific-technical focus and those with a socio-economic focus. For instance, changing the labour productivity includes technical innovation as well as investment in human and social capital. Resource intensity can be changed by switching to a resource mix with renewable energy and more sustainable lifestyles and consumption patterns. The resource impact finally can be reduced by environmental protection as well as by risk reduction and conflict management.

In economic theory capital comprises those assets that produce economic output. Extending the notion of capital to natural and social systems might comprise all assets that produce a valuable system change. The productivity of societies can be measured to the degree to which they not only depend on natural and physical capital but also develop human and social capital, strengthening the productive role of human actors and their social ties to achieve certain ends. While *human capital* comprises knowledge, skills and capabilities that enable human beings to act in new ways, *social capital* refers to the institutions, relationships and norms that shape the quality and quantity of a society's interactions (Coleman 1994, Fukuyama 1999). Social capital is the glue that holds institutions and societies together. It is critical for the productivity and well-being of communities, the sustainability of their development, and it facilitates co-ordination, co-operation and conflict moderation in a society. Thus social capital is an essential indicator for the advancement of societies. Integrated sustainability strategies would build on human and social capital to protect natural capital because it ensures its efficient and intelligent use.

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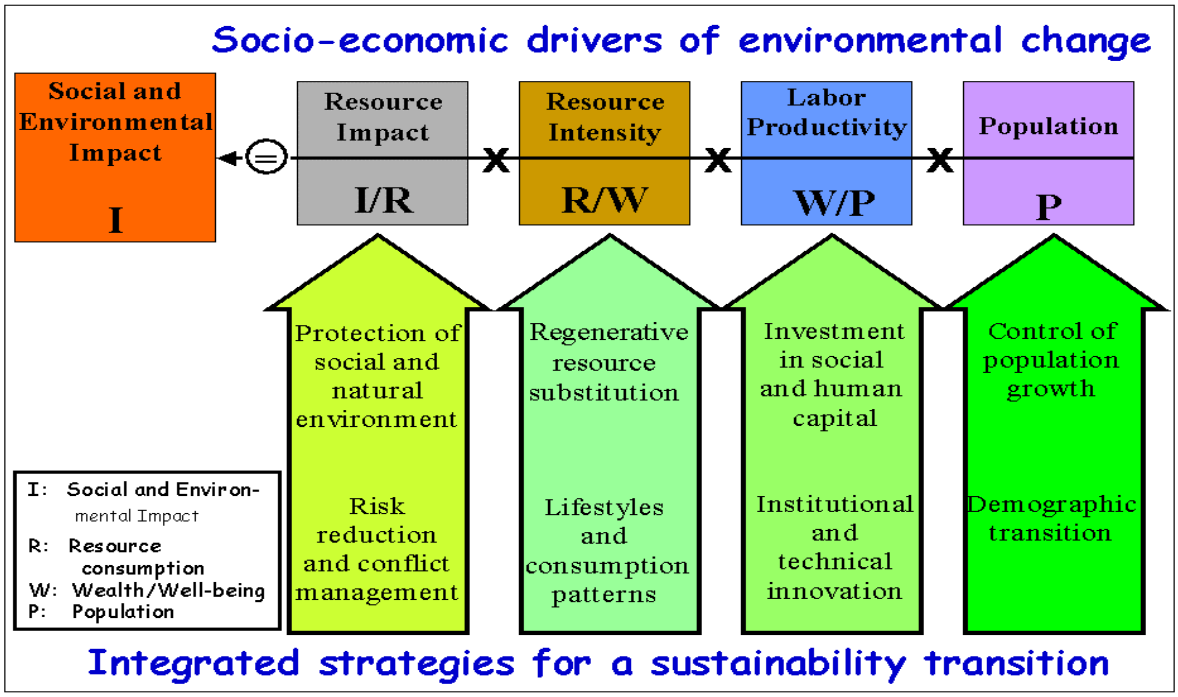

Figure 1: Socio-economic drivers of environmental change and integrated sustainability strategies.

To avoid conflicts and strengthen the positive link between natural and social capital both natural and social sciences are indispensable to jointly contribute to integrated sustainability strategies. This suggests that both collaborate in finding an interdisciplinary design of measures and instruments. According to Scheffran (1999) five types of strategies can be applied to stabilise the balance and reduce the conflict potential between natural and physical capital in ecosystems and human and social capital in socio-economic systems:

1. *Eco-consistency (environmental protection):* Resource consumption should not exceed the natural carrying capacity. Regeneration can be achieved through nature reserves, harvest limits, or conservation of endangered species.
2. *Improved technical efficiency (effective resource use)* can be obtained during the whole resource life-cycle to decouple economic growth from resource use, satisfying human needs with fewer resources.
3. *Risk management (damage prevention)* diminishes unacceptable hazards to the needs of some actors (e.g. from accidents, anthropogenic natural catastrophes, environmental toxins, or radioactivity).
4. *Fair distribution (equity and justice)* adjusts the resource share of each player in a democratic and fair process.
5. *Sufficiency (changing demand)* directly affects the preference and values for lifestyles and adapts them to the prevailing natural conditions, which can lead to a higher quality of life.

Integrated sustainability concepts should take into account the fundamental connections between the five factors. The impact of the strategies and the balance of natural and social capital depends on the societal environment, in particular on the interaction and participation of the various actors as well as the degree to which conflicts can be resolved and co-operation can be achieved.

If central control mechanisms are neither realistic nor desirable, the question arises under which conditions a spontaneous, self-organised sustainability transition to ecologically compatible modes of behaviour can emerge in dynamic coalition networks. A basic requirement is to involve *stakeholders* into dialogues, learning and decisionmaking processes (Earth Council 2001). *Alternative dispute resolution and mediation* deals with settling environmental and natural resource conflicts, as an alternative to (formal) governmental decision making processes and legal procedures. Mediation is a consensus process with a neutral, independent person acceptable to all of the participants, whose task it is to manage the process and to assist disputing parties in finding common agreement (Weidner 1998).

These and other participatory approaches can be embedded into a framework for conflict analysis which is based on a multi-agent model of action and interaction (see Scheffran 2000). Such a framework includes the *context* of an action (e.g. environmental restrictions); the *actors* (e.g. nations); the *issue or system* which is acted upon (e.g. climate change); the *preferences, values* and *goals* (e.g. growth, environmental protection) of the actors; the *power resources* under control of the actors (e.g. investment, law); and finally the *policies* and *positions* of the actors (e.g. emission permits). Each of the dimensions is linked via *action cycles*, which describe the sequence of an actor's *observation and perception* of each issue; the *decisionmaking* on using power resources with regard to the options for action; and finally the *act* itself of applying the resources on the issue or system. On the one hand, the action cycles depend on their natural and social environment, on the other hand they shape the environment in a complex dynamic way. Multiple actors interfere with each other in *reaction and interaction cycles* such that incompatible goals, resources and policies may lead to conflict. Co-operative conflict resolution and system management can be organised in interactive sessions, combining real-world games with computer-based simulation. The various elements and tools could be integrated into a framework of *Participatory and Interactive Conflict Analysis and Management (PICAM)*.

Objectives and problems in implementing European sustainability strategies

THE ROAD TO GOTHENBURG

Following the 1992 UN Conference on Environment and Development in Rio, sustainable development became a key objective of the European Union, outlined in Article 2 and 6 of the Amsterdam Treaty. Its efficient implementation had to wait for developing a more coherent policy framework after the Luxembourg summit in December 1997. The 1998 Cardiff European Council became the starting point of an integration process of environmental and other policies, "the most ambitious and innovative contribution in the global push towards more sustainable forms of economic development" (European Consultative Forum 2001b: 5).

At the 1999 Helsinki summit governments laid the foundation for the 6th Environmental Action Programme and agreed to submit to the 2001 Gothenburg European Council comprehensivestrategies with the possibility of including a timetable for measures and a set of indicators.

The Lisbon summit in March 2000 (a Europe based on innovation and knowledge) was the start of an intensive process for integrating social and economic aspects of development. Here the EC recognised that in the long term, economic growth, social cohesion and environmental protection must go hand in hand. The Stockholm summit in March 2001 signalled the need for joining the Lisbon Strategy with the sustainable development strategy and expressed the intention to review the progress in all dimensions. In the end, both processes from Cardiff to Gothenburg and from Lisbon to Stockholm lead to some integrated thinking at the EC level (Jiménez-Beltrán 2001).

To evaluate the difficulties and successes in implementing integrated sustainability strategies, the transition from the Fifth to the Sixth Environment Action Programme can be used (Global Assessment 2000). The Fifth Programme introduced the concept of shared responsibility and emphasised the need for stakeholders, citizens and decisionmakers to actively pursue environmental objectives. However, less progress has been made in changing economic and societal trends which are harmful to the environment. The European citizens' concern about the degradation of the environment is high, but many people have a restricted view of what they can do to protect the environment; few have confidence in the efficiency of public policy.

One result of the Fifth Programme is that strengthening the involvement of citizens is seen as key instrument. The 1998 Aarhus Convention could play an important role in democratising environmental management. Various instruments already exist, including the Eco-Management and Audit Scheme (EMAS), eco-labelling, the LIFE environment fund, exchange of experience and best practice. The Global Assessment (2000) report concludes that "without a reinforced integration of environmental concerns into economic sectors to address the origins of environmental problems and without a stronger involvement and commitment by citizens and stakeholders, our development will remain environmentally unsustainable overall despite new environmental measures."

The Sixth Environmental Action Programme sets out objectives for the next 10 years. It is quite optimistic that sustainable development can be the "key to our long-term welfare, in Europe and around the world". and an instrument of "finding ways of improving our quality of life without causing harm to the environment, future generations or the people of both the rich and developing world." (European Commission 2001b:4) Horizontal policy integration in the framework of the Cardiff process should be complemented by a bottom-up procedure. The vertical process should start at the regional level of the Member States

to set and negotiate with stakeholders targets for sustainability. Regional targets would be integrated on the national and European level. The Sixth Action Programme promotes environmental education to raise awareness and improve people's access to environmental information, e.g. through websites and educational programmes on greener lifestyles. Public authorities and NGOs can provide information to help people protect their local neighbourhoods, countryside and wildlife. Consumers could help to persuade firms to develop innovative green products and services.

THE GOTHENBURG COUNCIL FOR A SUSTAINABLE EUROPE

The Gothenburg Council in June 2001 was expected to "put flesh on the bones of the sustainability strategy" (Jiménez-Beltrán 2001). The ambitious goal of merging the sustainability agenda with the Lisbon socio-economic agenda was prepared with a Consultation Paper that outline the challenges and opportunities of sustainable development, identifies threats to sustainable development, and presents a policy toolkit for tackling the problems (European Commission 2001d). Another strategy paper develops a set of specific recommendations for an integrated sustainability strategy (European Commission 2001a). Compared to these comprehensive and specific documents, the Gothenburg Presidency conclusions adopted at the summit remain rather vague in implementing the general goal (European Council 2001b).

Gothenburg provides a basis for making sustainable development a core concern of all EU policies, legislative proposals and interested parties. The European Council has singled out a number of objectives and measures in the four priority areas: climate change, transport, public health and natural resources. Compared to the expected "significant economic opportunities" and the hope for "a new wave of technological innovation and investment, generating growth and employment", participatory approaches figured less prominent. At least, the EU promotes global environmental governance, improved policy co-ordination among Member States, and an associated national consultative processes including stakeholders.

The Consultation Paper was more specific about strengthening participatory approaches, which should be designed to "encourage citizens and businesses to integrate environmental and social considerations in their activities." Among the specific ideas is a "Round Table" of about 10 independent experts and a two-yearly Stakeholder Forum to assess EU Strategy. Instead of creating winners and losers, policies for sustainable development should rather promote "win-win" situations. Those who have to adapt should be treated fairly and not suffer unnecessary costs. Citizens and stakeholders could be better involved through information, transparency and education; communication and dialogue; public responsibility, participation and mobilisation; and public-private policy.

REQUIREMENTS AND REALITIES OF SUSTAINABLE GOVERNANCE

The widening gap between stated requirements of sustainability and the reality of European politics was critically evaluated in a report on sustainable governance (European Consultative Forum 2001a). The implementation of environmental policies is judged as insufficient since the political measures as such are ineffective. The effectiveness depends on the political support and readiness to respect and implement the measures at national, regional and local levels and by the authorities responsible for implementation. The key problem: "The people's concerns obviously do not reach the political institutions, and their action does not reach people." (p.6) Therefore, a public discourse should be opened on the concept and strategies to achieve sustainability at local, regional and national levels.

To overcome the difficulties the report recommends an optimisation of the institutional and procedural arrangements of governance according to the concept of *multilevel constitutionalism*. This requires co-ordinated governmental action and a functioning civil society, with the aim of enhancing democratic legitimacy and accountability of action. Actors of the civil society, including the scientific communities, relevant networks, advisory institutions and non-governmental, non-profit-making, grassroots organisations, should be supported, consulted and involved in the framing and monitoring of sustainability policies.

For the European Consultative Forum it is a priority to adopt and further develop a European plan of co-operative control structures and multi-level self-regulation for sustainable development, minimising traditional measures as legislation, command and control, and strengthening the link between actors of civil society and public authorities. Specific implementation measures for the European Council would include a European sustainability council (ESC) consisting of the national sustainability ombudsmen responsible for monitoring implementation. A sustainability report would explain to what extent the proposed act takes account of environmental considerations. For each sectoral policy a set of integration guidelines is required. Self-rule in the civil society

would require mechanisms and funds supporting NGOs in this field.

Given the difficulties experienced in integration, for some observers such as Andrew Jordan (2000) multi-level governance and integration in the EU is more a series of intergovernmental bargains managing national needs. In his view the required policy integration will not come through reforms in patterns of governance but only succeed at the beginning through pragmatic nationally-based strategies of "first moves" in the different problem areas (such as climate and biodiversity).

Conflict management in European climate policy

EUROPE AS A GLOBAL CLIMATE PLAYER

Climate change is a global problem that the European Union alone cannot solve, but since the 1980s Europe pushed for international climate protection. After the 1992 Framework Convention on Climate Change (FCCC), which basically was a compromise between the EU and the USA, the delay in implementation was largely caused by the USA, the oil-exporting countries and a few other states. The EU initially supported stricter emission levels in the 1997 Kyoto Protocol, which fixed reductions by 8% relative to 1990 levels by the years 2008-2012.

Despite the emergence of the EU as a global player in climate negotiations, a common European decision on climate policy is blocked by the different preferences of the member states and their heterogenity (Sprinz and Weiss 2001). Economic levels and emissions vary greatly in the EU. The ability to fulfil the stabilisation goal is not the result of a coherent European climate policy but rather of national policies. Only Germany, UK and Luxembourg will reach their Kyoto obligations until 2010, due to the radical changes in East Germany and the privatisation of the UK energy sector. Without these favourite circumstances the EU emissions would be 5% above the 1990 level (Weiss 2001). Only 3% of the required 11% carbon dioxide reductions were realised through EU policies.

A set of measures and instruments for emission reduction is being implemented, including improved energy efficiency, increased use of renewable energy, agreements with industry, energy saving and emission trading. Market-based instruments such as tradable emission certificates have a good chance to yield cost-efficient solutions. Co-operative measures such as Joint Implementation and the Clean Development Mechanism reduce costs and allow a technology transfer between regions. The relationship between emissions trading and other policies and measures has been addressed in European Commission (2001d), which is the start of a consultation process allowing stakeholders to give their opinions on emissions trading in the EU.

Effective implementation of a sustainable European energy and climate policy is hampered by various conflicts on global, national and regional levels (Ackermann et al. 2001). With its current decision-making structure the EU is not well equipped to manage multi-level conflicts. If the EU stays united as in defending the Kyoto Protocol Europe can play a key role in shaping decisions. But if the EU is split as in the case of the energy-carbon tax failure is likely.

Although the Kyoto Protocol cannot sufficiently reduce emissions, it provides a chance for political coalition formation and institution-building. The regime might be a nucleus for creating a network among interested actors on multiple levels and thus could contribute to the formation of social capital which may be more important than the actual emission reduction. It is essential however that the Kyoto regime achieves a minimal efficiency in achieving its target and is stable with regard to counter-coalitions that try to replace or overcome it.

European climate policy is facing difficult choices in relation to the developing countries. The developed world still has far higher emissions per capita than the developing world. This ratio may change by a rapid emission growth in developing countries, eventually surpassing those of industrialised countries in the next 15 years, at the risk of ecological decline. A strict climate policy would cut emissions in both developing and developed countries, at the risk of economic decline. Conflicts may be weakened or postponed by technical progress. Some countries have managed to make significant improvements in energy efficiency. Between 1985 and 1998 the GDP of the EU has grown by 35% while energy-related carbon dioxide emissions grew only by 4%. This decoupling is partly due to a move towards less energy-intensive sectors. Here the chances for co-operation through technology transfer are obvious if Prisoners' Dilemma situations can be overcome by first moves of either developing or developed countries (Ipsen et al. 2001)

European climate policy is strong with regard to physical capital but weak on social capital. Technical and economic instruments alone cannot do the job. They need to be accompanied by a sustainability transition of the whole energy system and its associated social environment, reducing dependence on cheap fossil fuels and moving towards a decentralised

renewable infrastructure. There must be a focus on the actors that produce, consume and distribute energy. A key element is the diffusion of more sustainable energy-related lifestyle patterns, based on learning, education and the build-up of social capital. For instance, this concerns consumption patterns that favour low-emission cars. Drastic changes cannot be achieved from the top without participation on all levels of society. Such a participatory energy and climate policy can only be fruitful if EU wide policies and the interests of people converge in a continued learning and adaptation process.

Some policy instruments are best applied at the national level, whereas others may be effective only with international co-ordination. To find a cost-effective policy mix the Commission is working with stakeholders in the context of the European Climate Change Programme (ECCP) on European-wide initiatives to implement the Kyoto commitment. The liberalisation of energy markets allows new suppliers to enter the market, may improve efficiency, reduce energy prices and increase energy demand.

THE CONFLICT ON THE ENERGY-CARBON TAX IN THE EU

Energy taxes related to the carbon dioxide content of fuels present an effective contribution to emission reductions if disruptive effects on the competitiveness of energy intensive sectors can be minimised by EU wide co-ordination and harmonisation. Taxes can efficiently reduce carbon dioxide emissions by internalising external costs (environmental damages) of production and consumption. On the other hand, taxes would increase costs in some sectors and lead to competitive disadvantages, provoking resistance.

Neglecting preventive conflict management contributed to the failure of carbon-energy taxes in the EU. Neither the 1992 EC proposal for a carbon-energy tax nor the directive setting of a framework for taxation of energy products in 1997 has been accepted by the Member States. The 1990's were a decade of missed opportunities. In 1995 there was a 70% majority in the EU population for an emission tax and a strong majority in the European Parliament (419 voted pro-tax, 80 against). The strong group of pro-tax *Leader States* (Austria, Denmark, Finland, Germany, Netherlands, Sweden) was facing a smaller group of *Cohesion States* (Greece, Ireland, Portugal, Spain) which were sceptical about the tax because of costs for the economy and internal pressure. The group of *Follower States* (Belgium, France, Great Britain, Italy, Luxembourg) was without a clear preference. Initially Great Britain opposed a EU-wide tax competence and favoured a national tax. The Council initiatives for a compromise in 1999 lead to a majority with 13 of 15 member States (except Spain and Ireland) supporting tax.

But the window of opportunity closed, due to the economic crisis, the fear of losing competitiveness and the campaign against high energy prices (Weiss 2001). The situation escalated publicly in September 2000 when a wave of protests against oil price increases swept through the European Union. The pressure from the street, multiplied by the media, induced busy reactions from governments and required compromises which weakened the original intention. No mechanism could be found to moderate resistance and satisfy critics. Information and transparency for citizens were insufficient and failed to prove the positive sides of the carbon-energy tax.

EU institutions played a relevant but not sufficiently moderating role in the conflict which became complicated because of changing interest coalitions and lacking balance of economic and political interests. Attempts by the EC to achieve compromise failed because of internal differences and lacking political will. Co-ordination and conflict management were largely missing in the internal EU decisionmaking process. There is a second chance. In preparation of Gothenburg, the strategy paper suggests to establish an EU framework and long-term strategy for energy taxation (European Commission 2001a). A key element is the adoption of an energy products directive by the end of 2001. The long-term strategy for energy taxation to internalise external costs by end 2002 provides incentives to use energy efficiently and to encourage the use of cleaner technologies.

To support this process there is need for an integrated strategy, including market-based instruments, conflict resolution and participatory approaches. To convince critical citizens and firms it is essential to point to the positive effects emission taxes could have in reducing costs for other production factors and increasing employment. Contrary to some arguments there was no evidence of significant negative impacts on employment from the existing taxes and charges (European Council 2001c). The sectors that benefit from tax and the revenue expenditure rather tend to be more labour intensive (e.g. recycling). Protests might decline when environmental technologies represent a growth sector. For instance, German firms are among the leading producers of wind power (behind Denmark), and with its total installed power Germany is first, ahead of the US. However, the growing resistance against wind power facilities in local communities could weaken the upward trend. As a recent analysis of the social implications of wind

power in the city Marburg demonstrated, the concerns of citizens can have a political impact and should not be neglected, how unjustified the arguments may seem from the perspective of wind supporters (Zoll 2001). An integrated strategy would include improved information and education, participation and compensation to resolve these problems.

EU biodiversity policy and the conflicts on protected areas

HABITATS DIRECTIVE AND NATURA 2000

In the 1970s**,** there was much pressure from European citizens and interest groups over the loss of wild birds due to shooting, pollution, drainage and inappropriate development. The migratory bird population is particularly symbolic of EU integration and co-responsibility by member states to play their part in maintaining habitats on flight paths. The result was the acceptance of the Birds Directive (70/409/EEC) in 1979. For many members states, this Directive merely reinforced existing national bird protection acts. But among the French, Spanish and Italians, the potential threat to their cherished cultural practice of shooting wild birds, especially song birds, lead to much opposition and initial non-compliance.

The Birds Directive established sites known as Special Protection Areas (SPAs) as the basis for safeguard. But over the course of the first ten years, there was much foot dragging by member states in the face of the powerful agricultural and developmental lobbies. The failure on the part of many EU member states either adequately to transpose EU biodiversity Directives or to implement fully or speedily enough has led to several crucial European court cases (see Fairbrass and Jordan 2001). European Court of Justice rulings in relation to the Birds Directive have defined some critical aspects of protected sites in the EU, and set the scene for the much broader, subsequent Habitats Directive.

These court rulings have clarified the intention of the EU to establish a sort of natural entitlement for the Natura 2000 sites. Here is a summary of the principal criteria for safeguards: Economic considerations associated with development of a proposed site must not be used as an argument against designation so long as the scientific case for the integrity of the conservation states of the site is sufficiently robust. This means that a potentially significant development scheme can be thwarted by designation. Where that scientific case cannot conclusively be proved, but where there is sufficient evidence that any proposed activity or development might prove a threat to the integrity of the conservation status of a site, then the precautionary principle must be applied and the development or activity amended, curtailed or prohibited in accord with the principle. This means that a biodiversity safety first policy is required, with any management scheme for a site being legally forced to place biodiversity first.

These two legal provisions are reinforced in the Habitats Directive of 1992. In one sense this appeared to be a response by the EU to the 1992 Convention on Biological Diversity. But in practice, the Directive was being promoted throughout the 1980s as part of the Environment Action Plans for the EU. It was essentially the result of particular lobbying by wildlife groups nationally and Europe-wide together with their technical advice as to what species, and particularly, habitats, provide the best protection for the range of wildlife regarded as vital for European biodiversity.

The Habitats Directive established a second category of site, the Special Area of Conservation (SAC) to complement the SPA. Together these two designations make up Site of Community Importance (SCI), or *Natura 2000*, the platform for wildlife protection in the EU. In principle, all SCIs are supposed to be formally designated by 2004. At the time of writing, only about half of the proposed sites will be gazeteered. WWF Europe (2000: 35) suggests that about 35% more "shadow" sites should be designated if the aim of ensuring biodiversity is to be met. Many of these sites are located in areas where economic activity and local social values are incompatible with the objectives of the Directive. To bring them into the biodiversity fold will require much money and highly skilled participatory processes. These are not yet seriously being considered, let alone being prepared for.

Added to the SPA legal framework, summarised above, were two additional safeguards that now apply to all of *Natura 2000* sites: First, plans and projects can only be pursued on a site when there is an imperative case of overriding national interest, and no feasible alternative exists for the proposed change. This places a straight jacket on almost all development proposals, though in practice, this seemingly tough provision is often overridden by political imperatives. Second, in such circumstances compensatory measures must be secured by providing the equivalent conservation status adjacent to the existing site, or elsewhere, according to agreed scientific advice, in order to maintain 'favourable conservation status'. So far, the scientific and participatory procedures for ensuring this are still to be assembled

The crucial test of "favourable conservation status" remains ambiguous. Essentially it means that the particular integrity, representativeness and interconnected functioning of ecosystems must remain intact, or be re-created, following any disturbance. For the EU Directives to be fully effective, considerably more resources will need to be put into "local conservation well-being" and scientific audits by coalitions of bodies, including the private sector, and a variety of local interests.

Beyond SCIs, the Directive obliges member states to improve the ecological coherence of the *Natura 2000* network by ensuring that land management practices and planning procedures in linked areas, or corridors, or buffer zones, are compatible with the conservation management schemes which must be established for each site. This process has led to the formation of biodiversity action plans (BAPs) in a number of member states. These BAPs have proved to be very controversial in some countries for being too mechanistically dependent on science, insufficiently sensitive to cultural values and local customs, exclusive and formalistic in their preparation, and unable to cope with climate change, fragmentation and the continued erosion of species that remains the dominant biodiversity crisis (see Smart et al. 2001).

One crucial issue with BAPs, it seems, is that they fit into bureaucratic performance indicators and cover emblematic species (such as bittern and otter), so are susceptible to business sponsorship at the possible expense of the overall biodiversity value. Furthermore, they may beguile planners, developers and farmers into assuming that protection of biodiversity in managed sites is all there is that needs to be done. Since the adoption of the Birds Directive, the European Commission has itself conducted a number of progress reviews of implementation of the Birds Directive based on national reports. WWF Europe (2002: 12-27) has conducted a review of the performance of the 15 member states in meeting the aspirations of the Habitats Directive. The main conclusions of this important review are as follows.

1. Nearly all member states have failed to transport the management and participatory features of the Directive into national legislation. This means that few SCIs are guaranteed participatory management plan preparation, and even fewer can be assured of adequate land management safeguards in their vicinity
2. The timetable for proposing possible SCIs (by 1995), having these assessed for Europe-wide significance (by 1998) as candidate sites, and formally creating the network (by 2004) is slipping badly. Even by 2001, the review/assessment process has not been completed, representing a delay of three years. In addition, Germany, Greece, France, Portugal, Belgium, Italy and Ireland have all been reprimanded by the Commission for their failure to produce complete lists of proposed SCIs. All member states have yet to prove that their sites are coherently incorporated into a biodiversity strategy of habitat enhancement and linkage, rather than a collection of existing designated areas.
3. No member state has yet financed adequately the management plan process nor has adequate stakeholder participation been effective. In essence, the delivery of truly effective management plans for every European SCI will be at least a decade away, and even longer for the connected areas whose empathetic management will be vital for the integrity of conservation.
4. Enforcement and monitoring the effectiveness of all these measures remains weak in all member states except Denmark, France, The Netherlands and Sweden. In similar vein, empathy and integration into planning, transport, agri-environment and development procedures are far from being added into coherent biodiversity strategies in almost all member states, despite sincere efforts in the UK, Belgium and The Netherlands.
5. Funds are available both nationally and Europe-wide for this vital integration process. In practice, not enough is being made of the Commission's offer to place elements of regional development (Structure and Cohesion Funds) and environmental protection (LIFE and Nature and agri-environmental schemes) into biodiversity enhancement. This is notably the case with regard to the linked arrangements in inhabited zones where a huge effort to incorporate and transform hostile local opinion will be vital (see Stoll-Kleemann 2001a, 2001b).
6. The incorporation of local interests and a broad range of values and outlooks has varied widely, with Germany and the UK making progress, and Italy, Ireland and especially Greece, doing very little. The Commission is tying aid funds to the successful implementation of participatory approaches. This is proving especially effective in the case of Germany and France. This general policy of linking structural and regional development funds to comprehensive designation and management of SCIs is regarded by many as vital for the successful implementation of the Direc-

tive. In this way, biodiversity objectives should be seen as an integral positive aspect of sustainable development, and not, as currently appears to be the case, an impediment to economic and social progress.

THE GERMAN EXPERIENCE

In Germany, the state of the environment is still a reason for concern and is far from being managed on a sustainable basis (SRU 2001): 69% of the existing 500 biotope types in Germany are endangered, while one third of them face serious threats; 36% of the fauna and 26.8% of the flora are endangered while 90% of these threatened plants and animals occur in remaining areas of natural biotopes or sites under extensive use (BfN 2000). The evidence suggests that the rate of loss of species and habitats has not slowed down considerably, and the aim to establish a national biotope network that would cover between 10 and 15% is still far from being completed (SRU 2001). It is clear that agricultural, forestry, and tourism activities represent the most important environmental factors. This is influenced by a lack of funding for maintenance, monitoring, and weak legislation. As a consequence the proposal is to integrate nature conservation into the planning system and to establish management plans (Haarmann and Pretscher 1993).

Nature conservationists expect much of the implementation of the Habitats Directive. The significance of the *Natura 2000* network as a document created and ratified by all EU members is welcomed in Germany (Dieterich 1998; Ssymank et al. 1998, Müller-Motzfeld 2000). The total sum of designated areas in Germany under the Habitats Directive is 6.4% and 4.6% under the Birds Directive. To put this into context, other EU members such as Denmark or the Netherlands have proposed about 23.8% and 17.0% respectively of their national territory as SACs and 22.3% or 24.1% respectively as SPAs (European Commission 2001a). Nature conservation NGOs in Germany have criticised the proposed designations as being insufficient and not fully representative of the existing habitat types, and subsequently produced 'shadow lists' to complement gaps in the official lists (WWF 2000a; Bund Naturschutz 1999, 2001).

The designation procedures of protected sites under *Natura 2000* have not been met with wide acceptance amongst land using and developmental interests. So there is a reluctance to implement by giving priority to economic interests. This has resulted in an incomplete list of proposed SCIs (WWF 2001a).

This delay in SCI designation is a function of the German Constitution. The federal structure of Germany that divides the country into 16 Bundesländer (federal states) means that the Federal government in many cases only provides a framework legislation, while each of the Länder in turn is made responsible for implementing its own laws. This is the case for nature conservation (BfN 1997). The Länder arranged for individual timetables resulting in different schedules for implementation (BfN 1997). This has also happened with the *Natura 2000* network (Stolpe and Korn 2000), where each of the Bundesländer, is responsible for ratifying the Directive into its legislation (Dieterich 1999).

Problems have also arisen from the management requirements (according to Art. 6(1), 43/92/EEC), for the management plans, found to be the most common weakness in all EU member states (WWF 2001). The management schemes are significant, because they will determine the success of the biodiversity strategy when it comes to establishing objectives for management schemes. This confusion is important for German biodiversity futures since *Natura 2000* will require management plans to be implemented, so will only prove successful when such plans are reached in agreement with land-users or landowners (WWF 1999). The financial basis for these management agreements will play a crucial role in 'persuading' agriculture and forestry landowners to comply with nature conservation objectives.

Another factor in the delay in designation was the difficulty by the state and federal nature conservation agencies to communicate in a faithful and non-threatening manner with local land-using interests. According to a detailed study by Stoll-Kleemann (2001a: 38-40) the nature protection agencies maintained an elite culture of scientifically driven "ecological mission".

Because the agencies are politically weaker than their economic development brethren they tend to be more aggressive in their mission, are more strident over their moral crusade. Accordingly, they dislike the progressive practice of inclusion because many staff (less so the directors, interestingly) simply do not trust the farmers, foresters and hunters. For their part, the local landowners bond into socially supported tribes. These help to reinforce stereotypes of their self-proclaimed traditions and the conservationist insensitivity, and lead to coalitions for effective resistance to designation and management plans (Stoll-Kleemann 2001b).

There is much political adversity in Germany over the future of rural societies, environments and economies. Meanwhile the German biodiversity lobbies

side with the conclusions of WWF Europe outlined earlier. There is still no coherence to the network, there is inadequate monitoring and funding, the pressures for development have not abated, landowners are by no means approached sympathetically. Such proposals of the Habitats Directive, and protected site management plans could all too easily become creatures of local stakeholder deals rather than maintain biodiversity integrity. This is why supportive integrationist policies coupled to resources, training and championing leaders for participatory transformation will be vital if biodiversity is truly to be safeguarded.

Conclusions

It is clear that a good deal remains to be done to fully safeguard European flora and fauna. However, if recent EU policy statements and proposals are converted from 'aspirations' to 'reality', then a significant improvement in the track of the EU on biodiversity protection might be on the horizon.

For example, the Commission's assessment (European Commission 1999: 8-9) of the EU's 5th Environmental Action Programme noted that with regard to nature protection and biodiversity some progress had been made in most member states. However, the report stressed that considerable efforts would still be required fully to implement the *Natura 2000* network, and that priority would be given to integrating biodiversity protection into other policies. This report also argued that there should be "full exploitation at national level of the opportunities created by the new CAP regime and Structural Funds". Subsequently, in setting out strategic objectives for the period 2000 to 2005, the Commission (European Commission 2000b) acknowledged the degradation of the environment and called for a "multiple Union response" in which "a sustainable development strategy must reconcile environmental development, social progress and sustainable economic growth".

In setting out the context for the 6th Environmental Action Programme, the Commission reflected (European Commission 2001b: 3) on the impact of the preceding one, noting that problems remained and the environment would continue to deteriorate unless: more progress were made with regard implementation of environmental legislation in member states; integration of environment into economic and social policies driving the pressures in the environment was improved and deepened; stakeholders and citizens took more ownership of efforts to protect the environment; new impetus to measures aimed at addressing a number of serious and persistent environmental problems as well as a number of emerging concerns.

It is possible that through action plans and associated target setting the EU may find the means of achieving the sort of policy integration that might assist with biodiversity protection. In a very recent Communication, the Commission describes (European Commission 2001b: 5), the action plans presented as part of that policy document as "tools for integrating biodiversity considerations into policy-making and activities across a wide range of policy sectors". The action plans list several objectives for the EU's biodiversity strategy and identify specific targets in each case. For example, in seeking "fully" to implement the Habitats Directive as well as the Birds Directive, the Commission has set the target of "full transposition" for both directives by all 15 member states by 2002. To achieve that the Commission will undertake to oversee member states' transposition, "including if necessary initiating legal action, to ensure that directives are correctly incorporated into national legislation." (*ibid.*: 5-7)

In sum, the EU experience so far, with regard to biodiversity protection, is one of noble intent (reflected in the aspirational texts cited immediately above), spirited intervention on laggardly national and regional behaviour by the Commission and the Court, chronic under-funding and failure to integrate a rich interpretation of biodiversity into a wide array of policies. It remains to be seen as to whether these aspirations will become reality. Certainly, the difficulties of establishing and holding onto biodiversity indicators in a participatory age will also prove immense.

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Part VI

Global Governance by Non-state Actors?

Dealing with Climate Change: The Role of Institutions in the Eyes of the Public

by Irene Lorenzoni and Ian Langford***

Climate change has been defined as "a serious potential threat to the world's environment" (EEA 1999, 79).[189] There is now compelling evidence that the climate is affected not only by naturally occurring variability, but also by human actions (IPCC 2001). Internationally, mitigation of climate change is being driven by the Kyoto Protocol, according to which signatory developed nations will reduce their greenhouse gas emissions to meet set targets. Attention is also increasingly being devolved to adapting to climate change.

One of the main anthropogenic contributions in Europe to climate change is energy use (EEA 1998). The protests against high petrol prices in September 2000 in the UK highlight how aspects related to climate change are often marginalised in the context of other issues. Disinterest towards climate change may be in part due to its characteristics (long-term, complex, uncertain) and the political, social and economic implications of behavioural change and actions. If 'public perception is an important basis for political legitimisation' (van Dommelen 1999, 190), within the context of climate change it becomes relevant to examine the links between public views with institutional stances and approaches. A general overview is provided in the sections below. These form the backdrop to parts 4, 5 and 6 which examine how individuals in Italy and the UK perceive climate change on four inter-dependent levels: personal, societal, institutional and cultural.

Institutional positions on climate change

In Europe. The European Union (EU) is strongly committed to reducing six of its main greenhouse gas emissions (GHGs) by 8% of 1990 levels by 2010, as prescribed by the Kyoto Protocol, through "action on a broad range of emission sources" (Env.DG 2000, 4; UN release 2001). The European Climate Change Programme (ECCP) launched in 2000 identifies 42 measures which should achieve 664-765 Mtcarbon dioxide equivalent reductions, including cost-effective measures and emission trading schemes (Wenning 2001).

In the UK. According to recent calculations, by 1999 national GHGs had fallen 14.5% below 1990 levels, mainly as a result of restructuring of the energy supply sector, promotion of greater energy efficiency and pollution control measures. Despite this success, the Government acknowledges that present consumption and behaviour patterns are not sustainable. These will have to be modified to implement both mitigation and adaptation measures (ENDS 2000; DEFRA 2001) as outlined in the UK Climate Change Programme (UKCCP) to ensure that the UK meets its -12.5% Kyoto target (DETR 2000; UNFCCC 2001). It is estimated that a combination of measures already implemented in the UK since the 1997 Kyoto Protocol alongside the options outlined in the UKCCP should achieve a 23% reduction of national GHGs relative to 1990 levels by 2010. Critics argue, however, that projected achievements of nuclear, renewables, combined-heat-and-power and domestic energy efficiency options have been over-estimated (ENDS 2000).

In Italy. Notwithstanding the adoption of the first Italian climate policy, technological improvements and the substitution of electricity with natural gas (Marchetti 1996; Montini 2000), by 1997 national carbon dioxide equivalent emissions had increased by 6% with respect to 1990 figures (Gaudioso et al. 1999). Consequently, a new national Plan for the reduction of GHG Emissions was approved in 1998 to meet the country's -6.5% Kyoto target (i.e. 95-112 $MtCO_2$). The effectiveness of this Plan has also been debated at great length; some doubt the measures, if implemented, will suffice to meet Italy's target (Montini 2000).

Public perceptions of climate change

In Europe. In the most recent Eurobarometer survey (EC 1999), 80% of respondents were aware of envi-

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189 Our sincere gratitude goes to all those who contributed to the research by completing the survey and attending the focus groups in Norwich and in Rome. This research was undertaken as part of a NERC/ESRC Interdisciplinary Studentship awarded to the first author.

ronmental problems: climate change was considered as the third environmental issue of concern, preceded by pollution and the hole in the ozone layer. 56% of respondents maintained that environmental improvement would only be achieved through attitudinal and behavioural change alongside legislative enforcement. Environmental organisations were trusted by 51% of respondents to provide environmental information; 37.1% trusted scientists, 27.4% the media, 16.5% teachers, whereas only 2.5% trusted political parties in general and 2.3% industry.

In the UK. Although interest and concern for the environment are increasing among the UK population, recent surveys suggest that these still occupy a back-seat in comparison to other issues in people's daily lives which can easily be influenced by more immediate concerns. An opinion poll of the UK public undertaken during the recession year of 1996 showed that only 4% of respondents considered the environment as an important issue. In comparison, during the 'boom' year 1989, the environment was the most important issue for 35% of respondents (Corrado 1997). In October 2001, only 2% of people surveyed maintained environmental issues were important for Britain against 57% arguing the importance of foreign affairs (MORI 2001). Other polls have denoted a growing tendency for the UK public to blame companies for environmental degradation and to feel hopeless about what they can do to improve the situation. Conversely, more people are placing higher trust in the British Government than in the EU to take correct environmental decisions.

In Italy regard for environmental issues lags behind other aspects of people's lives, although 'active' communication of environmental issues and perceived beneficial influence of the EU (Marchetti 1996; Degano and Ferro 1998) have contributed to increasing public interest. A poll by ISTAT estimated that 40% of Italians are concerned about the environment and 50% are very or fairly concerned about global warming and the ozone layer (Bianchi and Della Seta 1999).

A theoretical perspective on public perceptions and institutional responses

Climate change is a very complex issue, due to the uncertainties surrounding its causes and consequences, both spatially and temporally. These invariably affect the way the public engages with the issue and how it is regulated (Wiener 2001).

Previous research recently conducted by the authors (Lorenzoni and Langford *forthcoming*) has shown that members of the UK public share a number of fundamental concerns linked to perceptions of global climate change. Public perceptions and institutional responses are set within an underlying mesh of core anxieties about the future of the world, and socially-mediated representations of a 'reasonable response' accounting for scientific uncertainty. These are real issues that have distinct social, political and cultural impacts, as well as defining our personal lives (Sartre 1952) in relation to contemporary risks such as climate change. These concerns are expressed in images, concepts and narratives focusing on a number of themes (e.g. concern over lifestyle choices, disenchantment with traditional politics and institutional forms, and negative visions of the future) which are of direct relevance to policy makers wishing to engage, educate and mobilise public support for mitigation and adaptation measures.

The aim of the following sections is to compare the relationship between these perceptions, shared concepts and images with institutional responses in the UK and Italy. We have divided the subsequent analysis into four arenas, or domains of interactions between perceptions of climate change and perceptions of various actors and processes within society:

(1) *personal*: involving the individual's perception of the self, lifestyle and life aims in relationship to attitudes, behavioural intentions and actions towards climate change;

(2) *social*: how the individual perceives the role of social groups in adapting to and mitigating against climate change, including groups with which the individual identifies, and 'others' who differ;

(3) *institutional*: the relationship between the individual and society with the dominant institutions of society with regard to climate change;

(4) *cultural*: an embracing category representing the historical legacy of different intellectual, economic, political and ethical/moral systems within contemporary societies.

The Norwich and Rome case studies

Two case studies were selected to examine how individuals perceive risks in relation to institutional responses in the UK and Italy:

- Norwich (UK): city of 200,000 inhabitants in the largely rural area of East Anglia, 115 miles by road (185 kms) north-east of London;
- Rome: capital of Italy located in the centre of the peninsula in the Lazio region, with just over 2.6 million residents.

In order to enhance comparability between the two case studies, the stages of research and the methodology undertaken were maintained as similar as possible. This article focuses on two of the study-stages, namely: large-scale questionnaire surveys of Norwich and Rome citizens to investigate perceptions, attitudes and behaviour to climate change; analytical focus groups with adult questionnaire respondents.

THE QUESTIONNAIRE SURVEY

A pre-piloted self-administered questionnaire on climate change was distributed to students and adults in Norwich in the summer of 2000. The same questionnaire was translated into Italian allowing for linguistic and cultural differences. The consistency of the questionnaire was also tested in 10 one-to-one interviews with native Italian speakers. The climate change survey was then distributed to students and adults in Rome during the Spring of 2001 (Table 1).

	Norwich	Rome
High-school students	65 responses	82 responses
Adults (parents of students, teachers, members of community groups, IT and university employees)	135 responses 48.5% female, 51.5% male aged 19 to over 65 varying socio-economic classes	206 responses 58.2% female, 38.8% male aged 19 to over 65 varying socio-economic classes
Overall response rate	200 completed questionnaires = 24.3% response rate	288 completed questionnaires = 35.4% response rate

Table 1. Details of Norwich and Rome case study questionnaire results

Note that we did not aim to obtain a representative sample of the population of the two cities. Rather, we chose the sample to ensure a large enough range of variation with regard to socio-economic characteristics to make comparisons between subgroups possible.

RESPONDENTS' VIEWS ON CLIMATE CHANGE

To investigate whether respondents' views on climate change could be classified statistically, a factor analysis and varimax rotation were undertaken on Norwich and Rome adult questionnaire responses to nine questions relating to: the importance of climate change, human influences on the climate, personal and global effects of climate (see Lorenzoni and Langford *forthcoming* for a detailed account).

For the Norwich case study, the factor analysis with varimax rotation based on the 135 adult responses showed that a large proportion of the variance in the responses could be described by two orthogonal factors: Factor1 (29.2% of the variance) ranging from values indicating 'humans do not affect the climate' to 'humans affect the climate', and Factor2 (15.8% of the variance) ranging from positive values indicating that 'climate change is not important or of concern' to negative values 'climate change is important and of concern'. Interestingly, the factor analysis and varimax rotation applied to the 206 Roman adult responses to the same nine questions also yielded the same Factor1 and Factor2 as the most significant (explaining 28.8% and 28.2% of the variance respectively).

Having calculated the factor scores for each individual Norwich and Roman adult response and plotted them in the four quadrant space defined by these two orthogonal factor axes, it was possible to subdivide adults' views into (see Figure 1):

DENYING: humans do not affect the climate and climate change not important;

DOUBTING: humans do not affect the climate but climate change important;

UNINTERESTED: humans do affect the climate but climate change not important;

ENGAGING: humans do affect the climate and climate change important.

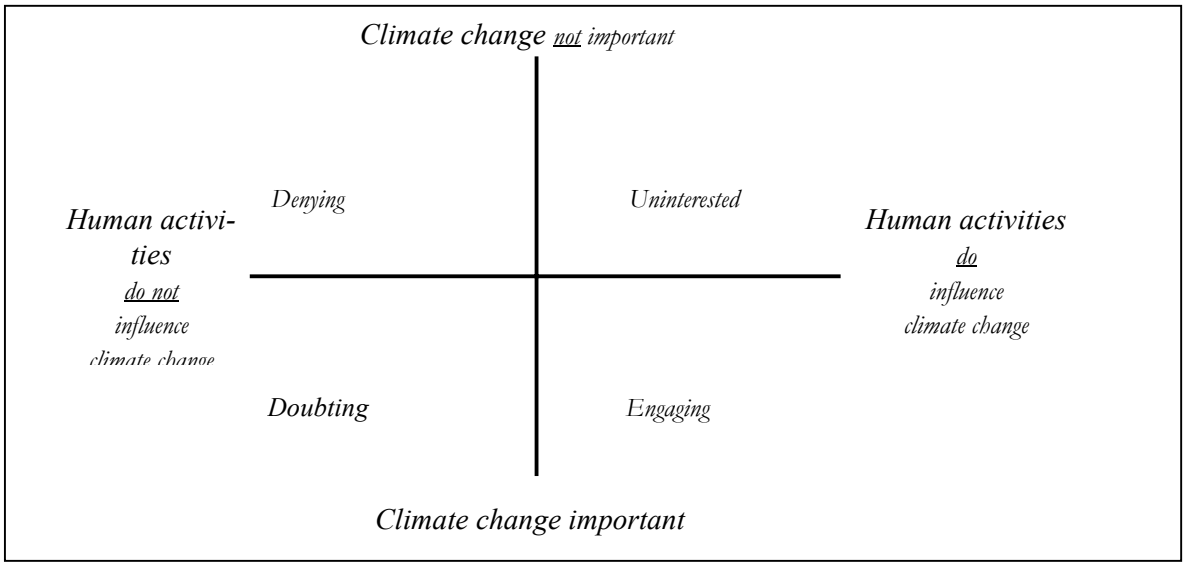

Figure 1. Four typologies of adult respondents' views of climate change.

ANALYTICAL FOCUS GROUPS

As it was considered that quantitative information derived from the questionnaires could be supplemented by more qualitative data on the underlying motivations of respondents in stating particular attitudes or opinions, we organised focus groups to obtain more in-depth views on climate change from adult respondents who had completed a questionnaire, stated their interest in participating and whose factor scores lay in one of the four quadrants.

In Norwich, the respondents that agreed to participate were organised into four separate sessions during November-December 2000, depending on whether their opinions had been classified as *Denying*, *Uninterested*, *Doubting* or *Engaging*. In total, 19 people attended the focus groups. Problems were encountered during recruitment for the Roman focus groups. Perhaps because Italians are not used to being directly consulted on research issues and participating in focus groups, fewer (10) respondents agreed to participate. These were organised into three separate sessions in May-June 2001 to ensure enough participants for an interesting discussion: the first included *Uninterested* and *Denying* views; the second *Engaging* views; the third people whose views were mainly *Doubting*.

In both case studies, a facilitator ran the discussions and an assistant moderator kept minutes. All groups were asked the same questions as outlined in the 'protocol' which was subdivided into two sections: the first contained questions on general impressions on climate change, importance and expectations, responsibility and blame, long-term relevance of climate change.

The second section of the protocol was concerned with people's views of how society and the economy could develop in relation to climate change. Participants were shown a table outlining three storylines of possible future socio-economic scenarios in the 2050s, tailored respectively to represent characteristics identifiable with East Anglia (for the Norwich groups) or with the Lazio region (for the Roman groups), on the basis of work by Lorenzoni *et al.* (2000a-b). Subsequently, participants were shown pictorial representations of possible climate outcomes in relation to the three worlds for the 2050s and asked to consider which outcomes would be realistic or desirable.

Results

This section outlines the views of Norwich and Roman adult questionnaire respondents and those who participated to the focus groups, based on a combination of statistical analysis of questionnaire results and a psychodynamically-oriented discourse analysis of the focus group transcripts. We seek to examine perceptions of climate change in relation to those actors and processes within society according to the four 'levels' mentioned earlier, although precise and distinct spheres of influence cannot be distinguished, as interdependencies among 'levels' exist. Note that here we refer only to the adult respondents, as these (not the students) were invited to attend the focus groups. Statistics are expressed as chi-square values (χ_1^2) and probability p for binary variables on which cross-tabulation was undertaken. Where one-way analysis of variance (ANOVA) was performed on variables coded as scores, the F statistic and probability p values are given.

PERSONAL 'LEVEL'

Analyses of questionnaire responses show that the Norwich and Roman adult respondents differed in terms of the importance ascribed to certain 'general' issues (Table 2) and to various environmental issues (Table 3) in their own lives. Respondents in Norwich were more concerned about individual and local issues such as financial, lifestyle, transport and population growth (these latter two issues are very prominent in the region of East Anglia, where Norwich is situated) (Table 2), while Romans considered more important to their own lives other environmental issues such as GMOs, climate change, ozone depletion and pollution (Table 3).

Table 2. Significant differences between Norwich (N) and Roman (R) questionnaire respondents on currently important issues in their own lives.

Issue	Respondents who said it was important		χ_1^2	p value
Financial situation	R= 23%	N=43%	15.083	<0.001
Lifestyle	R= 26%	N=39.2%	6.665	0.010
Population growth	R= 2.4%	N=11.1%	10.975	0.001

Note: the original responses which yielded these results were re-coded as binary variables (yes =1; no, don't know =0).

Table 3. Significant differences between Norwich (N) and Roman (R) questionnaire respondents on the most important environmental issues currently in their own lives

Issue	Mean score		F statistic	p value
Climate change	R=4.0	N=3.5	15.57	<0.001
Destruction of tropical forests	R = 4.3	N = 3.6	21.25	<0.001
Genetically modified organisms (GMOs)	R=3.9	N=3.2	15.59	<0.001
Hole in the ozone layer	R= 4.3	N=3.7	26.76	<0.001
Pollution (to air and water)	R=4.8	N=4.3	29.23	<0.001
Transport issues	R=3.5	N=4.0	21.83	<0.001
Use of fossil fuels	R=2.9	N=3.3	5.02	0.026

Note: the answers which form the bases of this analysis ranged, on a Likert-type scale, from 1 (not important) to 5 (very important). A higher mean score indicates a greater importance.

Moreover, 56.3% of Norwich respondents also stated they had enough information on climate change to have an opinion about it in comparison to 22.4% of the Roman sample (χ_1^2=40.295, p<0.001).

In the Norwich focus groups, debate abounded on the evidence for climate change: "… my instinct says 'yes, it is actually changing' but you don't know how much that's being talked up" (Female, 50, *Uninterested*). Individuals also expressed concern regarding the perceived bias of information provided by environmental groups and businesses. Most of the participants to the discussions were torn between their 'moral' sense of changing their behaviour and what they could personally achieve: "… I think there is what you would really like to do and I think what's practical" (Female, 50, *Uninterested*). "…Perhaps we are helpless but hopefully we can start to change things. I think the time is now… It might be too late, but I still think you've got to give it a try" (Female, 55, *Engaging*).

The Roman participants to the focus groups also expressed similar contrasting concerns: "[climate change] is something that upsets me quite a lot because I have noticed a worsening year by year" (Female, 60, *Doubting*). "…I am not a biologist but I think [it's] a part of normal evolution … let's not make man look like a devil now!" (Female, 55, *Doubting*). Others found it difficult to engage with the concept of climate change, as it might not affect one's life due to the long timeframes involved. Although the majority considered climate change as an issue with negative connotations, some positive ones from personal standpoints were also mentioned: "…the case that there is no more Spring, for me is a positive thing because I am allergic. So I believe this is a positive thing even if I know perfectly that it's not posi-

tive" (Female, 30, *Engaging*). Several people also mentioned the need of more information about climate change, reflecting the results of the survey.

SOCIAL 'LEVEL'

Norwich and Roman respondents also tended to differ on the importance to society of specific general issues (see Table 4) and environmental issues (Table 5). Romans considered mainly environmental issues as more important (Table 5), whereas Norwich residents focused more on social issues (Table 4).

*Table 4. Significant differences between Norwich (*N*) and Roman (*R*) questionnaire respondents on the importance of various issues for global society.*

Issue	Respondents who said it was important		χ_1^2	p value
Conflict and war	R = 56%	N = 72%	8.816	0.003
Education	R= 20.6%	N= 52%	35.892	<0.001
Famine	R= 33.3%	N= 53.3%	13.404	<0.001
Improvements in health	R=24%	N= 45%	16.603	<0.001
Population growth	R=27%	N=54%	25.412	<0.001
Reduction of poverty	R=58.3%	N= 74.8%	9.687	0.002
Safety from crime	R=17.6%	N= 40%	20.816	<0.001

Note: the original responses which yielded these results were re-coded as binary variables (yes =1; no, don't know =0).

*Table 5. Significant differences between Norwich (*N*) and Roman (*R*) questionnaire respondents on the most important environmental issues for the well-being of global society.*

Issue	Mean score		F statistic	p value
Destruction of tropical forests	R= 4.6	N= 4.4	6.12	0.014
Genetically modified organisms	R=4.1	N= 3.7	10.05	0.002
Hole in the ozone layer	R= 4.5	N=4.2	10.38	0.001
Pollution to air and water	R=4.8	N=4.5	16.24	<0.001
Transport issues	R=3.6	N=3.9	6.35	0.012
Use of fossil fuels	R=3.2	N=3.8	8.91	0.003

Note: the answers which form the bases of this analysis ranged, on a Likert-type scale, from 1 (not important) to 5 (very important). A higher mean score indicates a greater importance.

The Norwich respondents also felt that the outcomes of actions to deal with climate change were more important to society as a whole than the Romans did (F=3.62, p=0.058).

However, from Norwich group discussions, it transpired that most attendees were not optimistic regarding society's contribution towards ameliorating the climate change problem, partly due to the individualistic nature of human beings: "... unless it really affects us we don't actually, in my experience, go out of our way to inconvenience ourselves" (Female, 40, *Denying*). Besides, there was a growing concern of how to motivate people to think about change in the long term when they currently feel helpless or not interested: "… I am sure people would be very pleased to do whatever was necessary. I think the fear is that they don't know that any efforts they make are going to bear fruit" (Male, 50, *Denying*). Another part of the problem was the perception that "concern for the environment rather snobbishly tends to be a middle-class worry" (Male, 50, *Engaging*). The importance of education was strongly emphasised, given that humans' role as custodians of the Earth was being severely overlooked: "we need an awareness that we do live on the planet and that there are things we can do as well as things we can't do. And we need education" (Male, 50, *Denying*). Attendees did however express some hope for the future: "... Perhaps people will slow down their pace of life some day" (Female, 40, *Denying*).

Several participants to the Roman focus groups confirmed the general disinterest widespread among the Italian population on environmental issues and their

belief in the culpability of human beings: "The unawareness of human beings, or the irresponsibility perhaps, that is to blame" (Female, 55, *Doubting*). Some of the Roman participants also accused present society of being too materialistic and oriented towards the short term: "… we [...] make use of everything immediately without thinking that then a long term investment [...] is the one that brings not only a greater well being for society ... but also at environmental level" (Female, 25, *Engaging*). "What remains to do? try to involve the public in the most communicative way possible" (Male, 60, *Engaging*).

INSTITUTIONAL 'LEVEL'

Roman and Norwich adult questionnaire respondents also differed with regards to whom they would blame or trust about climate change. Romans attributed more responsibility to the EU to limit climate change than Norwich respondents ($F=6.31$, $p=0.013$). On the contrary, for Norwich respondents more responsibility lay on family and friends than for the Romans ($F=5.27$, $p=0.022$). Romans placed higher trust in government ($F=16.24$, $p<0.001$), local councils ($F=3.96$, $p=0.048$), the EU ($F=39.20$, $p<0.001$) and individuals/citizens ($F=7.51$, $p=0.007$) to lessen the impacts of climate change than Norwich respondents.

Although the present market system and industry were held responsible for current environmental degradation, "it's greed, company greed, that has damned this planet" (Female, 55, *Engaging*), ultimately Norwich participants to the focus groups lay the blame of inaction with regards to climate change on politicians, voicing cynicism on their commitments: "It's not a vote winner for politicians .... How to get re-elected, that's more of a concern to them I'm afraid, being human that's to be expected" (Male, 50, *Doubting*). Only major direct catastrophes will spur action: "We see changes in human culture and human behaviour are caused by something forcing the issue ... I would like to have seen the Houses of Parliament [emblem of UK government] getting flooded, they'd soon start legislating then" (Female, 50, *Uninterested*). The general distrust of politicians was made more poignant by several participants who strongly advocated a neutral agency to take over: "... you do need an external agency because they'd be able to press harder for things that are not popular with politicians" (Female, 49, *Doubting*), although a guarantee of the agency's neutrality would be difficult to obtain: ".... Politics unfortunately but inevitably comes into it, so it's very difficult to have an international body that can be neutral because it's got to be funded by somebody and generally speaking that organisation that funds them often has a vested interest" (Male2, 50, *Denying*).

In terms of prospects for the future, as one Norwich participant neatly summarised: "climate wise, I'd only hope it's global change. The world has to agree on how much we are allowed ourselves as nations in polluting the world. If the ship goes down we're all on it. There are no lifeboats" (Female, 50, *Engaging*).

Likewise, Roman participants expressed cynicism about the 'goodwill' of international organisations, such as the UN, and resentment towards the USA for not agreeing to the Kyoto Protocol. Similarly, the current Italian Prime Minister was also accused of pursuing his own interests, not those of the environment. There was a general perception that this was becoming standard practice "... in the 60s there was the economic boom and the choice fell on the private car industry, rather than an industry of efficient public transport. It was a choice ... backed up by those who were at the government [i.e. in power]. So they did not want our well-being, it was their choice because they, in that way, gained more. And it was more convenient for them." (Female, 55, *Doubting*).

Similarly to the Norwich participants, the Romans also agreed that individuals would not change their behaviour on their own accord. Many individuals felt that changes needed to be enacted at 'higher' levels (e.g. global co-ordination) so that they would filter down to individuals, although the weight of vested interests could hinder any change. Stronger legislative controls to make "the culture of the common good ... more widespread" were advocated for Italy, renowned for the corruption of its officials (Male, 55, *Uninterested*). The EU was mentioned as a source of guidance: "I was very happy when we entered Europe because I had the impression that if we had remained outside we would have really been a third world country" (Female, 55, *Doubting*) as unfortunately Italians are perceived as "broken up, we are disunited, we are badly informed" (Male, 60, *Engaging*).

CULTURAL 'LEVEL'

In the discussions, Norwich participants referred to how their own society would react to climate change in comparison to other nationalities. Despite some negative views of the British system, some people maintained that perhaps it would be easier to implement actions to deal with climate change on a nation-by-nation basis, rather than wait for international agreement.

Analyses of the questionnaire data revealed that the majority of Roman respondents (86%) believed 'government policy makers informed by scientific experts should decide which measures to adopt against cli-

mate change' compared to only 64% of Norwich respondents (χ_1^2=20.933, p<0.001), which may also be ascribed to cultural differences.

In the focus groups, we also asked participants about their perceptions of how people in the other country investigated in the research would respond to climate change. Norwich participants were not generally optimistic about Italians. A sense of inertia was perceived to affect decisions in Italy: "I would imagine they would lie back and have another glass of Chianti. My experience with Italians is that they are lovely people but mañana" (Male2, 50, *Denying*). Others thought the prospect of climate change would also worry Italians: "they may be less keen on 2 degrees rise in temperature, whereas we're sitting here thinking 'yeah, this could be OK'" (Female, 35, *Doubting*). Although many people acknowledged their views of other cultures were anecdotal, often the Italian errant political system was blamed for current problems: "… I am not sure how their political system is now. Until a couple of years ago they were changing governments every six months or a year… I would suggest that actually an unstable political climate does not help with issues like these…" (Female, 50, *Uninterested*).

Roman focus group participants also distinguished between the cultural features of their own country and the 'ways of doing' in other nations. Several Romans highlighted the disregard that many Italian citizens have towards environmental issues: "The culture of keeping, of 'accompanying' nature is a natural fact among some peoples. Among us [Italians] unfortunately it isn't" (Male, 60, *Engaging*). Other nations were seen as role models: "There are countries like Denmark and surely like England which have a different underlying tradition" (Female, 25, *Engaging*). Some individuals, however, objected to having parameters for change imposed from outside without adapting them to the Italian necessities and psyche: "... Italy is so different in terms of culture.... we should really do something perhaps, make it ours more than take it from outside... Create something of our own, an Italian change, that maintains Italian peculiarities, but there should be this change." (Female, 30, *Engaging*).

The British were perceived by the Romans as a bit rigid but pragmatic and sensitive to environmental issues: "… we know the English, and those in the Anglo-Saxon area, from the attention they have towards animals, the environment that surrounds them" (Male, 55, *Uninterested*). Besides, "they surely talk about the weather a lot and they certainly have the same problems that we have. That's why pollution as a phenomenon invests the whole of the world, it's not solely an Italian prerogative" (Female, 60, *Denying*). However, many Romans felt that British links to an anchored economic [capitalist] system may render them less flexible in their approach: "Regarding the governance of global phenomena I am pessimistic because they [British] are very westernised in the real sense of the word and therefore a bit reluctant to surrender their position…they are less willing in my view to collaborate with the rest of the world." (Male, 55, *Uninterested*).

Discussion

Clearly there are similarities, as well as differences, in Norwich and Rome respondents on the personal and social levels of analysis. In both locations, focus group participants referred to the dissonance between having a societal, even moral, obligation to 'do something' about climate change and the difficulties in actually taking some action (see also Stoll-Kleeman et al. 2001). Various strategies were uncovered for how people assuaged their dissonance and anxiety, including the difficulties of adapting their lifestyles, the unwillingness of 'others' in society to take action because of ignorance or lack of concern, the failure of institutions to provide leadership and effective legislation, and the greed of commercial enterprises.

The important point here on an individual level is that many respondents in both countries were willing to contemplate taking some action up to the point when they felt their lifestyles were threatened. The dominant social groups within Western societies want a better environment, a better social structure, but are wholly unwilling to violate their 'freedom to consume' or their 'consumer human rights'. Other personal concerns were centred around a more fatalistic view of 'perhaps we are helpless' and 'maybe it is too late', and the uncertainty of scientific evidence on anthropogenic influence on climate.

The survey particularly uncovered some differences in individual values between Norwich and Rome (see Tables 2 and 3): the former were more interested in local issues whereas the Romans focused more on environmental issues in their lives. Italians were more concerned about getting good information about climate change, whereas the UK respondents felt they were better informed. This probably reflects a genuine difference in media reporting campaigns on the issue by the Government and others, but may also mirror a more individualistic approach to risk taken by respondents in the UK (see Langford *et al.* 2000).

With regard to importance of issues for society in general, Norwich residents were more likely to state a

wider range than their Roman counterparts, which may reflect a cultural difference in regarding problems as personally instead of societally important (see Tables 4 and 5). The perception of 'others' regarding climate change was negative in both locations: 'people in general' were regarded as being disinterested in environmental issues, self-interested and unwilling to change. Roman and Norwich respondents talked about people being out of touch with nature and lacking education, about the 'throw away' society and people's reluctance to have any inconvenience *despite* having awareness and concern for the issue. Both sets of respondents recognised the need for more education.

From the survey and focus groups, we can also conclude that whilst respondents in Norwich and Rome have misgivings about regulatory bodies at both national and international levels, the Norwich sample were more concerned about institutional failure and the Romans more concerned about corruption. However, the Romans were less disturbed about corruption, perhaps because they to a degree accepted it or were used to it within their society than the Norwich sample were about institutional failure, perhaps because of the recent BSE and the foot and mouth disease crises. It appears that cynicism and pessimism for all regulatory bodies in the UK is quite general and deep set. Italians looked more to the EU for guidance, believing that EU legislation forced the hand of the otherwise tardy Italian Government.

In both locations, there was general concern about the lack of independence, neutrality and regulatory power of institutions, which are responsible for promoting mitigation measures to deal with climate change, and these were closely linked to negative perspectives of the future. Respondents expressed bleak views of the future, shrouded in uncertainty and doubt, believing that 'world markets' was the only realistic scenario for the foreseeable future, and that contemporary political and regulatory institutions would continue to be either unwilling or incapable of bringing about any significant changes. This was linked to a fear of further technological progress: given the enormous social changes of the past 50 years, at least in part generated by technological advances (such as the information revolution), how is it possible to imagine the world 50 years from now and hence make decisions about responses to climate change? In general, both sets of respondents agreed that for any real changes to take place, a 'UN style' organisation with some real regulatory power is needed—but that this is unlikely to come into being in current circumstances unless a genuinely major catastrophe occurs first.

It is also possible that institutional responses to climate change reveal inherent cultural differences. For instance, the majority of the Roman respondents, as opposed to a lower percentage of Norwich respondents, believed that scientific experts should inform policy-makers when deciding which measures to adopt against climate change. This suggests that cultural backgrounds may influence the way Italian and English respondents perceive the advisory role that scientists have often had and the legitimacy of policy-makers (aided by scientists) in adopting a 'paternalistic' attitude towards citizens.

The individualistic 'character' of Italians in general, as defined by Roman participants to the group discussions, was related to the difficulty in implementing climate measures and changing behaviours. Norwich participants viewed the Italians set in a 'mañana' mode, although they did not perceive themselves as more proactive in terms of the actions individuals will take to improve the common good for society in general. The Romans in general thought of the English as being more attuned with nature, responsible, active. Both nationalities had others as 'role models': for the English it is neighbouring nations renowned for their environmental care (Holland and Scandinavia); the Italians looked up to 'Nordic' countries, including the UK. This reveals how both groups of respondents perceive their own nation in comparison to actions taken by others.

The call for collective and concerted action on climate change was very strong by both sets of respondents, although they remained dubious as to whether this would be possible within the timeframes needed to successfully address climate change. It appears that, were concerted action to not materialise, the 'fallback' alternative for both countries would be to rely on their national infrastructures and systems to act—by incorporating within their own legislative and procedural systems those notions and approaches that have successfully been used by others (i.e. their role models). In a nutshell, the Italians and the English had very different views of each other (some quite stereotypical) as nations and cultures despite forming part of the same Europe, but shared a common anxiety—is concerted action on the common problem of climate change set to fail?

Conclusions

This article illustrates how, through the use of two case studies in Italy and the UK, actions taken by national and supranational institutions in addressing climate change filter down to individual citizens via a whole host of mechanisms and invariably bear upon

the importance ascribed to the issue. In turn the responsibility and trust with which these institutions are endowed affects the efficacy of individual and social actions. It was clear, however, that personal motivation and interest in environmental issues decisively influenced the support for national and international action on climate change.

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Non-State Actors and Environmental Policy Change in North America: A Case Study of the "Registro de Emisiones y Transferencia de Contaminantes" (RETC) in Mexico

*by Raul Pacheco-Vega**

Despite the assertion by Chasek (2000: 427) that "states are responsible for adopting national and international policies that directly and indirectly affect the environment", it is also true that non-state actors play a key role in shaping how the nation-state designs and implement policy. The design, planning and implementation of environmental policy at the national level are not tasks that remain solely in the hands of nation-states. Non-state actors also play a significant role (Risse-Kappen 1995). Thus we need to assess their impact on environmental policy.

This article examines how domestic (Mexican) and international environmentalists NGOs (ENGOs) have exerted influence on the design and implementation of the Mexican *Registro de Emisiones y Transferencia de Contaminantes* (RETC). RETC is the Mexican version of one of the newest approaches to pollution reduction, the Pollutant Release and Transfer Registry (PRTR). PRTRs are based on the so called 'right-to-know' approach, which arises in response to Principle 10 of Agenda 21, indicating that states should facilitate and encourage public participation through disseminating information. This raises public awareness and mobilises interest groups to influence industrial firms to reduce pollution (Pacheco and Nemetz 2001). These registries include detailed data and information on the types, locations and amounts of substances of concern released on-site and transferred off-site by industrial facilities. Ideally, governments compile these data from each industry and make it available to the public through the Internet and print. This is an effective strategy when individual citizens or interest groups make use of the information and influence firms to reduce the impact on the environment. While the US and Canada have accumulated much more experience with PRTRs (for example, the US Toxics Release Inventory, TRI and Canada's National Pollutant Release Inventory, NPRI), Mexico's programme just started in 1996. Increasing comparability between the three North American PRTR is proving to be a difficult task because the Canadian and US systems are based on mandatory reporting where the Mexican system is entirely voluntary. There is also disagreement on the types of substances or even the level of data aggregation used to report on pollution. Furthermore, while the US and Canada have been working towards making NPRI and TRI more comparable for a number of years now, Mexico is still at the developmental stages. ENGOs in all three North American countries have lobbied to harmonise the Mexican system with that used in Canada and the US They argue that mandatory reporting is a necessary condition to achieve transparency and accountability in polluters. This lobbying has raised a number of questions regarding the appropriate design and implementation of the RETC and involves significant policy changes. One of the most important changes for RETC seemed to take place earlier this year. On June 29th, 2001, Mr. Victor Lichtinger, Secretary of Environment and Natural Resources in Mexico, announced that his ministry (SEMARNAT) would put forward a motion to the Congress to make RETC mandatory. As the RETC is the youngest and least developed PRTR, this is a bold move. This case, therefore, provides an opportunity to understand the relationships that have evolved throughout the development of this information-based instrument. This is also an opportunity to showcase how domestic and international environmental policy-making intertwine. The need to assess the impact of non-state actors on environmental policy-making, thus becomes critical and it is addressed within this case study.

The purpose of this article is twofold. First, to document the developments of the last few months in the development of a comparable Mexican PRTR and second, to examine the role that domestic and international ENGOs has played in changing the reporting mode of RETC. I am particularly interested in the specific strategies and tactics that ENGOs have used to increase pressure on the Mexican government and what has been the net effect of these tactics. I argue that Mexican, Canadian and US ENGOs have formed a coalition to increase pressure on the Mexican government to effect a change in the mode of reporting of the RETC, from voluntary to mandatory. In characterising NGO influences, I outline two types of pressure transmission mechanisms. *First-order mechanisms* are those where the influencing actor has a direct link with the target actor, and *second-order mechanisms* are those where the influencing actor seeks the intervention of an intermediate actor to exert pressure on a target actor. I will describe these mecha-

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nisms in more detail in further sections[190]. I also argue that the Mexican, US and Canadian ENGO coalition used 'second-order' mechanisms to bring the NACEC into the RETC negotiations and increase NGO leverage over the Mexican environmental ministry. Using direct lobbying strategies, disseminating information on the potential hazards that toxics pose to human health and participating in the meetings of the North American PRTR project, organised by NACEC, these ENGOs have exerted pressure on Mexico, both in a direct and an indirect manner.

I argue that ENGO pressure has changed the way the Mexican government proceeds with the design and implementation of RETC. However, ENGO pressure has not been the only driver for this change. Instead, preliminary evidence indicates that participation of international environmental institutions also played a major catalytic role. I will address this issue in further sections. The nature of this article is exploratory and therefore caution should be exercised to draw implications at this early stage.

The article is developed as follows: First, I describe the main characteristics of information-based instruments, paying particular attention to pollutant release inventories. I also describe the main features of the North American PRTRs. I then outline my research questions. I am specifically interested in the interplay of two key factors and their influence on environmental policy change: ENGO involvement and the influence of international environmental institutions. I also describe strategies and tactics used by ENGOs. In the third section, I outline the theoretical framework that I use for this case study. I draw from works in the comparative politics, international relations, social movement theory and organisation theory to inform the case study. I examine historical developments of the RETC as well as ENGO involvement in those events. I analyse how ENGOs used coalition-formation strategies to increase pressure on the Mexican government. I also analyse the pressure transmission mechanisms used by these ENGOs. Finally, I discuss the caveats and next steps necessary for this research.

[190] The nomenclature of 'first-order' and 'second-order' is borrowed from Kathryn Harrison, whom I thank for comments and suggestions for this article. Also, the first-order mechanisms would be equivalent to Wright's direct methods of influence, and the second-order mechanisms would be equivalent to his indirect methods of influence. I prefer to use first-order and second-order to emphasise the ordinal nature of the decision-making process of ENGOs: if a first order mechanism does not work, they will probably seek to use a second order mechanism.

Background

Since the publication of Agenda 21 in 1992, efforts to increase access to information are on the rise, and, in 1996, the Organisation for Economic Co-operation and Development (OECD) published a guide to help governments implement PRTRs. As a result, several countries, including Czech Republic, the United Kingdom, Canada, the US and more recently, Mexico, have adopted these instruments and started creating their own PRTR.

Mexico has needed to speed up the design and implementation process of the PRTR for two main reasons. First, as a member of the North American Free Trade Agreement (NAFTA) and a signatory of the North American Agreement on Environmental Co-operation, NAAEC, Mexico agreed to Resolution 97-04, which encourages Mexico, the United States and Canada, to work towards adopting more comparable PRTRs. This means that the Mexican PRTR, RETC, must become similar to the United States and Canadian equivalents. Second, in 1994, Mexico became a member of the OECD. The OECD nation-state members have also agreed to harmonise existing PRTRs. As a result, the Mexican government has been pressured to develop a comparable PRTR.

The US EPA Toxics Release Inventory (TRI), one of the first information dissemination programmes, was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). Considered by the literature on policy instruments as an information-dissemination tool, TRI is a publicly accessible toxic chemical database developed and maintained by the US EPA. Its primary aim is to provide public access to valuable information on how much toxic material is released by manufacturing activities. The provision and release of information to the government body is mandatory although reductions in pollutant releases are expected to be voluntary. Section 313 of EPCRA specifically requires manufacturers to report releases of a number (over 6000) of designated toxic chemicals to the environment. These reports are then submitted to the US EPA and state governments. EPA compiles the data and publishes it online[191].

The Canadian version of TRI, the National Pollutant Release and Transfer Inventory (NPRI) was created in 1992 and launched in 1993, mostly as a result of policy transfer and learning from the US experience. It aims to "provide Canadians with information on pollutants released to their environment"[192]. Results

[191] Data are available through the EPA website: www.epa.gov/tri/general.htm.

[192] Environment Canada's NPRI website www.ec.gc.ca/pdb/npri.

are seen as most encouraging.

Mexico started tracking data on emissions and pollutant releases in 1996, albeit on a voluntary basis. A case has been made that Mexico should adopt a mandatory reporting scheme, because at the moment, industrial firms in Mexico do not have to report to the RETC; they do so on a voluntary basis. This situation is viewed as problematic, because the non-mandatory nature of the Mexican RETC does not allow for cross-national comparisons, clearly an objective of OECD. In 1994, representatives of 38 governmental, ENG, industrial and academic organisations established a National Coordinating Group (*Grupo Coordinador Nacional, GNC*) [193]. 1997 marked the first year of voluntary reporting by industrial facilities, and the first report on Pollutant Releases and Transfers was issued in December 1999 by the Mexican government. Results did not seem to draw a very promising picture, although it could be argued that the lack of results was due mainly to inexperience with the PRTR system.

As indicated by documentary evidence, one of the most important (and yet unresolved) issues that were not agreed upon (within the GCN) was the type of access to information and availability of information on specific facilities. Also, the fact that reporting in RETC is voluntary has been highly debated and continued to be the most important issue of relevance in the discussions held in March 5-6, 2001. In June 2000, the NACEC council signed Resolution 00-08, which establishes the criteria that are considered as key to making a PRTR effective. Table 1 compares these criteria against the current situation.

In December of 2000, the Mexican government approved a voluntary standard (*Norma Voluntaria Mexicana, NMX)* that established the RETC system. While this proposed NMX has been highly debated (not only because it establishes voluntary reporting but also because the NMX itself is not mandatory, as opposed to the NOMs or *Norma Oficial Mexicana*), it has undergone approval already.

ENGO involvement in the RETC development process started in the early 1990s when the GNC first initiated steps towards developing the concept of RETC. However, the presence of ENGOs was felt more strongly since the early months of 2000, when the proposal for a voluntary standard was first drafted and put forward. Interestingly enough, a Mexican ENGO (Programa LaNeta, S.C.) initiated the project "Proyecto Emisiones" in 1997, specifically targeted at disseminating information about toxic releases[194]. While the role of this ENGO in disseminating information on toxic releases is very important, its impact seemed relatively insignificant, until early March of 2001, when efforts to build a coalition to fight for a mandatory reporting in RETC really started.

Research questions

The research question I pose in this case study is *what drove the Mexican government to change the RETC mode of reporting? What factors have driven this policy change?* I hypothesise two factors may explain the outcome. I use policy change as the dependent variable and ENGO involvement and the influence of international environmental institutions as independent variables. I hypothesise that Mexico changed the mode of reporting to the RETC as a result of external pressures from international and domestic ENGOs working in coalition, as well as the influence of international environmental institutions (e.g. NACEC).

Moreover, I hypothesise that the intervention of international environmental institutions becomes a catalyst in increasing NGO influence on environmental policy-making. This is what I call a 'second-order' mechanism, where an ENGO coalition brings an international institution (international organisation or intergovernmental organisation) to the decision-making process, therefore increasing the pressure on a target national government (Nelson 1996; Keck and Sikkink 1998). I will illustrate how second-order mechanisms come into play in the next sections.

Methodology

I started following the development of the North American PRTR project in early June of 2000. I used document analysis as well as semi-structured interviews with government officials, intergovernmental panels, ENGOs and academia. I traced ENGO involvement by documenting their activities and inferentially determining the extent to which civil society pressures have effected changes in this particular environmental policy context.

[193] Portions of the material presented here are taken from the "Background Paper for Roundtable Discussion on PRTR Reporting in Mexico", publicly available from the CEC. This background paper was provided to participants in the March 5 and 6, 2001 meetings. More detailed discussions can be found there. The section above is only intended to set the stage for my discussions on ENGO involvement.

[194] Personal communication via email, Ms. Azucena Franco, Proyecto Emisiones, May 7, 2001.

Criteria	TRI	NPRI	RETC
Reporting on individual substances	Yes	Yes	Not yet implemented
Facility-specific reporting	Yes	Yes	Not yet implemented
Periodic reporting (annual)	Yes	Yes	Yes
Public disclosure of reported data on a facility- and chemical-specific basis	Yes	Yes	Not yet implemented (unclear)
Limited data confidentiality	Yes	Yes	Unclear—not implemented
Standardised database structure to facilitate electronic reporting, data collection, analysis and dissemination	Yes	Yes	Developmental stages

Table 1. Current status of PRTRs in North America
(Source: Constructed from available bibliographic sources and Taking Stock 1995 report)

Using semi-structured questionnaire techniques, I interviewed key informants and sustained several discussions with ENGO representatives, government representatives and industry associations over the period from March 3rd, 2001 to November 25th, 2001.

Theoretical framework

In explaining this environmental policy change, I examine two specific aspects: First, I analyse what mechanisms ENGOs use to exert pressure on national governments. Second, I describe one of the strategies that ENGOs use to increase pressure on governments. By coupling strategies of coalition-formation with second-order mechanisms (whereby ENGOs appeal to international or intergovernmental bodies to increase the pressure on target national governments), I argue that ENGOs are able to effect policy change[195]. Some authors assert that ENGOs are unable to exact policy change (since policy formation is a responsibility of nation-states), however others (Edwards and Sen 2000; Wright 2000) state that ENGOs influence policy changes and evolution In seeking to influence nation-states, ENGOs make use of a variety of strategies and tactics. Not only do they seek to influence the process of governmental agenda-setting (Breitmeier and Rittberger 2000) but also the different stages of policy-making: design, implementation and evaluation. ENGOs disseminate information, educate the public about environmental challenges and issues, formulate policy options and lobby governments to further their interests. Furthermore, ENGOs seek to harness three sources of power (Wapner 2000): coercive, economic and moral power. Coercive power is used by states to shape the behaviour of target individuals (or nationals). ENGOs thus seek to influence nation-states to re-direct the activities of target populations to change their consumption patterns, lifestyles and production modes. Nation-states do so through regulatory structures, legal frameworks and policy instruments. Economic power provides a monetary incentive to target populations to change their behaviour. ENGOS therefore strive to influence the way individuals and organisations make decisions on the basis of economic incentives. For example, an ENGO may seek to engage economic forms of governance, targeting certain nodes of power within economic forces (Wapner 2000). Moral power appeals to held values and beliefs. It is argued that individuals will change their behaviour on the basis of right and wrong judgements. Thus, ENGOs seek to promote and influence social norms and modify the way people think and behave. For instance, campaigns promoting whales preservation might be based on a held belief that cruelty to animals is wrong in principle.

MECHANISMS OF PRESSURE TRANSMISSION

In harnessing the above-mentioned forms of power, ENGOs use a variety of pressure transmission mechanisms to influence state-behaviour. I use Wright's (Wright 2000) definition of 'influence': an actor A influences an actor B through information transmission, in an effort to alter actor B's behaviour. The trajectory of influence (or the order or choice of influence mechanism) is important because ENGOs will transmit pressure on the basis of previous successes and failures. I define two types of pressure transmission mechanisms. *First-order mechanisms* include (but are not limited to) direct government lobby activities[196] (personal interactions with government policymakers), networking and socializing, participation in decision-making roundtables and intergovernmental bodies, environmental regulation monitor-

[195] It is quite categorical to say this without examining cases where ENGOs have in fact used coalition-building strategies AND second-order mechanisms and this failed. However, I am more interested in the case when it worked, and I will look for cases where these strategies did not work further down the road.

[196] I believe my definition of first-order mechanisms would fit well with Wright's (2000) definition of direct methods, and second-order mechanisms would be equivalent to his indirect methods.

ing and enforcement (watchdog activities). When an ENGO uses a first-order mechanism, the relationship between the ENGO and the target group (individual, state or organisation) is more direct. For example, in this case study, I argue that ENGOs lobbying the Mexican government were using first-order pressure transmission mechanisms to exert influence on policy-makers. *Second-order mechanisms* include (but are not limited to) public education through information, raising awareness, targeting international environmental institutions in lobbying campaigns, etc. For example, when ENGOs coalitions did not find the results of their lobbying activities satisfying, they found a propitious forum to voice their concerns when representatives of a trinational intergovernmental body were seating at the same table. This strategy is analogous to Keck and Sikkink's boomerang effect (Nelson 1996; Keck and Sikkink 1998).

ENGO STRATEGIES AND COALITION FORMATION

Wapner argues that one of the most striking (and perhaps underrated) characteristics of ENGOs is their ability to establish networks and build ties between organisations in different geographical locations. Coalition building is without doubt a common strategy that ENGOs use to increase their influence. In building coalitions, ENGOs exchange resources, information, and harness the power of each other through the consolidation of a common front. By sharing expertise and bringing together participants from different organisations with strong knowledge bases in a particular area, ENGOs that belong to these networks are able to increase their leverage and further their demands when exerting pressure on nation-states. NGO coalitions may be found in the realms of human rights advocacy (Keck and Sikkink 1998), social movements to resist free-trade (Legler 2000), environmental protection activities (Princen and Finger 1994), amongst other examples. Definitions of *coalition* abound in the literature and there is ample range for disagreement on what constitutes a coalition. For Sikkink, a coalition is a transnational advocacy network that organises itself around a shared campaign and therefore, shares stronger ties and reaches a higher level of co-ordination[197]. Keck and Sikkink define a transnational advocacy network (TAN) as a group of actors that "includes those actors working internationally on an issue, who are bound together by shared values, a common discourse and dense exchanges of information and services" (Keck and Sikkink 1999: 89). Wright (2000: 83) argues that "coalitions are distinct from issue networks and alliances because ENGOs work together on a single joint campaign. Coalitions are held together by shared goals and understandings, shared political experience, finances, expertise, and joint participation in international forums" (Wright 2000:83). Jonathan Fox arrives (through a different pathway) to a similar definition as the one Sikkink suggests. In his paper (Fox 2000), he argues that coalitions are networks that have a higher degree of relationship density and cohesion (although he rightly to point out that these conceptual distinctions often overlap with each other). For Fox, the main purpose of the distinction is to understand the power relations and varying degrees of cohesion and co-ordination between the different actors, rather than assuming that all are equal and agree on everything[198]. For Hajer (1993), coalitions share a common 'discourse' (along the same lines of Keck and Sikkink). Thus, a consensus seems to appear with respect to shared values and beliefs as a characteristic of coalitions.

While I agree that co-ordination levels have to be higher for a coalition to work, I fail to see where shared values and beliefs lie. I believe Keck and Sikkink's definition is very useful in conceptualising a factor that increases cohesiveness in the coalition, but I believe that in their work, they fail to demonstrate how NGOs in a transnational advocacy network share beliefs and values[199]. For the purposes of this article, I define a coalition as a *network of organisations and individuals that is held together in a cohesive manner by sharing the same focus and targeting the same problem. As a result, this collaborative network allows these organisations to exchange complementary information, resources, thus complementing each other's core competencies.* In this definition, I borrow concepts from the complementarity perspective (Pacheco-Vega 1998) to analyse coalition-formation strategies[200]. I argue that coalitions form when ENGOs 'coalesce' around a central issue and those organisations share resources that become complementary to each other. In further sections of this case study, I show how ENGOs complemented each other and shared information and key resources to influence Mexican environmental policy.

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197 Kathryn Sikkink, e-mail communication, August 8, 2001.

198 Jonathan Fox, personal communication via email.

199 Although I confess that I have the same conceptual problem with Peter Haas's work with epistemic communities, it is easier (I believe) to identify and track shared causal knowledge (and scientific knowledge) than values and beliefs.

200 The foundations of this perspective lie in the strategic management literature, and I have previously applied this perspective in a study of strategic alliances between pharmaceutical companies and biotechnology firms. By exchanging key complementary resources, organisations complement each other and strengthen not only their ties but also their ability to survive and thrive.

Empirical evidence

The change from voluntary reporting to mandatory reporting may be explained by arguing that NACEC has acted as a catalyst to ENGO involvement in this policy change. By providing Mexican, US and Canadian ENGOs with spaces, forums and venues where they can share information, expertise and organise pressure campaigns, NACEC played a catalytic role that has strengthened (albeit perhaps involuntarily) the demands of civil society organisations. Co-operation amongst these ENGOs by working in coalition (both at the domestic and international levels) has solidified their role and further their interests. I argue that the change in Mexican environmental policy with respect to toxic release inventory reporting has arisen (at least partially) as a result of pressure from ENGOs (both domestic and international), working in coalitions, and the influence of international environmental institutions within which Mexico is embedded. In studying how ENGOs alter state behaviour, I look for explicit interactions between government officials of the target state (Mexico) and ENGOs activists involved in the case study.

While ENGOs became involved in the GNC since it started working to develop a proposal for a Mexican PRTR, it only became apparent until March of 2001 that their efforts to influence the Mexican government would not be effective if they did not build a coalition. While this coalition formation exercise does not appear to have been explicit, two factors might have influenced the formation of a coalition. First, Mexican ENGOs recognised early in 2001 that they needed to cooperate with other Mexican ENGOs and with Canadian and US ENGOs to increase pressure intensity on Mexican government officials. ENGOs realised that no matter how much they lobbied the Mexican government, their claims would not be heard (or prioritised) if they did not form a coalition that brought these issues to the table. Second, the number of meetings and interactions among ENGO representatives dealing with RETC increased within the last two years. Therefore, exchanges of information and resources also increased and ENGOs started to develop co-operative networks that would allow effectively influence Mexican environmental policy-making.

Also, the influence of three ENGOs seems to have been instrumental both in promoting a mandatory RETC and in building a coalition. Information dissemination efforts of *Emisiones: Espacio Virtual*, a project of Programa LaNeta raised awareness in the environmental activist community, thus leading to the formation of a more-or-less defined coalition of ENGOs. Emisiones was a project that first started operating in 1997, as a sub-programme of Programa LaNeta (a Mexican non-governmental organisation). Programa LaNeta was founded in 1993, with five full-time members (two of them work in the project Emisiones)[201]. Emisiones worked on a non-regular basis with other ENGOs such as Greenpeace Mexico, Colectivo Ecologista Jalisco, Proyecto Fronterizo de Educación Ambiental, Enlace Ecologico, etc. However, there were no specific ties built with other organisations (until 2000).

Under the leadership of Colectivo Ecologista Jalisco, a national campaign to promote appropriate reporting of the Cedula de Operación Anual was launched. This campaign is a formal attempt to strengthen comparability between RETC, TRI and NPRI[202]. The third ENGO that played an influential role, Presencia Ciudadana Mexicana, led by Martha Delgado-Peralta, produced a handbook on Access and Use of Information on Pollutant Emissions aimed to educate and inform the public about potential health hazards posed by chemical contaminants being released to the atmosphere, water and soil[203]. This handbook promotes the development of a mandatory RETC, where information by facility and by substance could be easily accessed and monitored. Ms. Delgado-Peralta is also the head of a national coalition of ENGOs named "Union de Grupos Ambientalistas" (UGA). UGA was previously headed by Regina Barba (who was also heavily involved in the development of RETC, formerly as an activist and since January of 2001 as a government official in charge of transparency and citizen participation at SEMARNAT). UGA has also worked intensely on lobbying the Mexican government to implement a PRTR that has a high degree of comparability with TRI and NPRI.

Other groups supported these three ENGOs through information exchange and collaboration in lobbying and letter-signing campaigns. For example, Fronteras Comunes (a northern Mexico-based ENGO) has submitted several requests of support to Mexican ENGOs in an effort to increase leverage and strengthen pressure levels on government officials. Also, Fronterizo de Educación Ambiental (led by Mrs. Laura Silvan de Durazo, who now sits on the Joint Public Advisory Council of NACEC) published a number of documents encouraging civil society to

[201] Personal communication via e-mail with Ms. Azucena Franco, Emisiones—Programa LaNeta, May 7, 2001. I thank Ms. Franco, and Emisiones for keeping me updated with information about the development of the RETC.

[202] More information about the campaign can be found at www.laneta.apc.org/emis/reporte.htm. This webpage is hosted by Programa LaNeta.

[203] The handbook can be accessed at http://presenciaciudadana.-org.mx/accesoantecedentes.html.

increase citizen participation through information-dissemination strategies[204]. Acting as a coalition, these ENGOs have pressured the Mexican government to change the reporting mode of RETC.

Until 2000, the work of these ENGOs was scattered and there was little visible co-ordination. However, since early 2001, six ENGOs seemingly started to intensify their exchanges and started building co-operative efforts to propose a mandatory RETC[205]. The Mexican ENGOs, bolstered by Canadian and US ENGOs participating in the coalition used this opportunity to bring relevant issues to the table. ENGOs repeatedly asserted that RETC must be changed to a mandatory reporting system, and called for placing such discussion on the agenda of the meetings. ENGOs felt that their concerns had not been properly taken into account and that since 1997-98 progress on the PRTR had stopped, and that the non-governmental groups had been shut out of the process. They felt the real issue was "the need to generate political will to move the RETC forward by giving legal authority to the RETC" (CEC 2001). As evidenced in the Summary of the Consultative Meeting on the Development of the *Taking Stock 1999* report, "many participants voiced their support for a mandatory PRTR in Mexico" (CEC 2001). Again, this demonstrates that ENGOs used the meetings to voice their concerns and increase pressure on the target nation-state (Mexico). At the end of the meetings, government officials admitted that there was a real need for a mandatory RETC and said that they would commit to work towards that goal. As a result, on March 6th, 29 representatives of 15 ENGOs from all three countries submitted a letter to Mr. Lichtinger praising him for making this commitment and asking for a formal calendar with milestones and deliverables that would fast-track the development of a comparable RETC[206]. Included in their demands were the creation of a Technical Secretariat for the GNC, and explicit mechanisms for civil society participation in decision-making with respect to RETC.

On April 18, 2001, SEMARNAT issued a voluntary standard (NMX-AA-118-SCFI-2001) for the RETC, something that ENGOs strongly opposed. Because NMXs are voluntary as opposed to NOMS (which are mandatory), ENGOs felt that this voluntary standard would work against the purpose of RETC and the commitment agreement reached in the March meetings. However, on repeated occasions (June 5 and June 29th 2001), Lichtinger supported the idea of a mandatory RETC. On June 4th, 2001, Emisiones and Fronteras Comunes sent a new letter to SEMARNAT asking for an update on the status of RETC. On June 29th, 2001, during the regular session of NACEC's Council, Mr. Lichtinger announced that he would submit a motion to the Mexican Congress to transform RETC from a voluntary instrument to a mandatory one. This event was considered a huge success in improving the comparability of PRTRs across North America. As evidence indicates, ENGO involvement played a key role in raising awareness, influencing government officials and bringing umbrella international organisations to the table to move their demands forward. It is important to recognise, however, that this influence might not have had such a strong impact if there were not for the catalytic intervention of NACEC as an overarching international environmental institution.

Caveats and issues to analyse for future research

Scholars in the policy sciences field would argue that to study policy change, one would have to study cases for a period of time long enough to allow for a meaningful evaluation of whether policy change has in fact, taken place. For Sabatier and Jenkins-Smith, who designed one of the most influential theoretical frameworks for analysing policy change (the advocacy coalition framework or ACF), "understanding the process of policy change—and the role of technical information therein—requires a time perspective of a decade or more" (Sabatier and Jenkins-Smith 1999). I acknowledge that in my study of this case, the time frame has not been a complete decade.

Also, this case study calls for a search on comparable cases where transnational civil society was involved and no policy change took effect (in order to find a counterfactual). As I have argued elsewhere, two of the most difficult methodological issues in evaluating cases of public involvement, citizen participation and social movements are causality tracing and counterfactual assessing. It is very hard to find cases where the influence of a variable is not present in order to compare relative effects of the same variable.

Finally, it is worth noting that unpacking the exact degree of influence of each variable (the power of international environmental institutions and the pressure from transnational civil society coalitions) is very difficult and poses a challenge to anyone doing re-

[204] See www.laneta.apc.org/emis/sustanci/retc/particip.htm.

[205] While Presencia Ciudadana, Emisiones and Colectivo Ecologista Jalisco seemed to be instrumental to start coalition-building efforts, they have also been supported by the other mentioned ENGOs.

[206] Letter submitted on March 6, 2001 to Mr. Victor Lichtinger, Secretary of Environment and Natural Resources of Mexico. A copy of the letter is available from the author. Ms. Martha Delgado-Peralta was designated as the coordinator for this campaign.

search on this area. Many other factors may influence the outcome and thus should be analysed to increase the level of rigour at later stages of the research.

Conclusions

While this policy change is not yet official (several events between June 29th, 2001 and November 30th, 2001 have suggested that the change from voluntary to mandatory RETC has not yet come through), it will most likely move forward. However, some evidence indicates that negotiations between ENGOs and SEMARNAT have reached a stalemate (Nauman 2001). It appears that the wording of the reform to the Mexican environmental law (LGEEPA) does not contain the appropriate words to emphasise that RETC should be publicly available, disaggregated and mandatory. Many could view this as proof that policy change has in fact not taken place yet. However, I argue that it will be very difficult for the Mexican government to stop RETC from becoming mandatory along the same lines of TRI and NPRI. In this case study, I have shown how ENGO involvement has influenced the Mexican government to modify the design and specifications of RETC. Future events will likely involve continued and strong ENGOs lobbying efforts to achieve policy change.

As this case study has shown, while the role of the nation-state remains central (regardless of the theoretical orientation of researchers), non-state actors have increasingly taken a more pre-eminent role in domestic and international environmental policy-making. By influencing processes of agenda-setting, decision-making and policy implementation, non-state actors are able to bridge the local-global gap through information dissemination, policy diffusion and transfer and strengthening processes. Using the metaphor of watering a tree, by acting at the grass-root level (watering the roots), ENGOs are able to exact larger scale effects on policy making (at the branch level). This case also highlighted the interplay of domestic and international environmental politics. While influence was felt through horizontal policy mechanisms (through direct contact with other countries' organisations), vertical policy co-ordination was also relevant (influenced by international environmental institutions). Also, while this case did not aim to provide a comparison between horizontal and vertical environmental policies, it clearly shows that the policy-making process is always the result (to a certain extent) of the interplay between these two schemes of policy co-ordination. The challenge to make the most of this intertwined relationship still remains fertile ground for future research.

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Regulating Environmental Action of Non-Governmental Actors: The Impact of Communication Support Programmes in Germany

by Wolfgang Meyer[*]

Since the end of the 80s, there has been a growing debate on the limits of regulating environmental behaviour in the Federal Republic of Germany. Although some success in developing environmental awareness by using information campaigns and education measures is well documented and widely known, these environmental attitudes have only poor influence on human behaviour.[207] All in all, the outcome of environmental information policy has been recognised as at least non satisfactory (see for example the disillusioning balance of environmental education in Lehmann 1999).

On the other end, traditional policy measures to regulate human behaviour are more and more criticised for not being adequate. Regulatory measures as laws needed for keeping expensive control instruments and the difficult environmental legislation in Germany already tend to be over-regulated. While using economic instruments, free-rider effects are unavoidable and the European free market sets strong barriers to any kind of subvention in the associated nation states. Finally, the international discussion on sustainable development and new participative forms of policies is another source of pressure on nation states interests in regulating environmental action of non-governmental actors.

To sum it up: in the last two decades "the set of techniques by which governmental authorities wield their power in attempting to affect society—in terms of values and beliefs, action and organisation—in such a way as to improve, or to prevent the deterioration of, the quality of the natural environment" (to use the definition for environmental policy instruments of Per Mickwitz 2000, 4) has been seen very critically with regard to its impact on human behaviour and its outcome for environmental protection. However, none of the organisations or groups involved in environmental policy have *principally* demanded the retreat of national authorities from environmental policy. In opposite to other policy fields in Germany, there still seems to be a broad majority ranging from ecological citizens action groups to multinational enterprises addressing environmental policy and especially the regulation of people's environmental behaviour primarily as a target for the nation state.

More fundamental criticisms of the possibilities of national governments to influence human behaviour came from globalisation theory and their supporters. In these scientific discussions, a trend of globalisation with widespread effects on the political system, the nation state, and its policy measures is supposed (e.g. Albrow 1996, Beck 1998, Zürn 1998). To summarise these discussions in a very rough way: caused by the rise of global institutions and their increasing influences, nation states lose their power in regulating its people's action by using any kind of policy instruments ("de-nationalisation"). National political decisions are more and more a result of self-regulation by (global oriented) non-state actors while the nation state and its institutions only keep the position of being some kind of mediator to balance opposite interests. Compared to the administrative institutions and bureaucracy of the nation state, these non-governmental actors are more flexible, closer to market forces and directly oriented to the needs of its target groups. Confronted with strong global competitions, they are "learning organisations" and adapt much earlier and faster to new societal developments both on the global as on the national or local level (for Beck "reflexive modernisation" is the motor of globalisation, see Beck, Giddens and Lash 1997). Within the forming "world society", individuals are no longer subjects of a nation state, but individualised participants whose needs have to be taken seriously by the non-state actors because of their power to organise in (global) protest associations or their role as consumers of non-state actors' products and services.

Three assumptions derived from globalisation theory should serve as research questions for this article: First, the role of (national) governments should change from active steering of the nation led by political ideologies to a passive reaction to general societal trends by moderating the interests of different pressure groups. Moreover, these national trends are only expressions of global trends, represented by transnational non-governmental organisations. Secondly, caused by market competition these collective

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[207] In the 90s, the longstanding scientific debate on the "gap" between attitudes and behavior achieved widespread public attention within the "ecological community" in Germany and several studies of this topic have been published. For an overview see Diekmann and Preissendörfer 2001, Huber 2001, Preissendörfer 1999, de Haan and Kuckartz 1996. Less scientifically but more politically relevant is Sachverständigenrat 1994.

actors are able to overcome the "bureaucratic sclerosis" associated with governmental administrations and develop themselves into "learning organisations" with improved management systems for a quick adaptation to various demands from their surroundings. And finally, individuals should be treated as serious participants (mostly as "customers") by these organisations. The common administrative understanding of citizens as "state subjects" who primarily have the duty to obey governmental rules and who have to be forced to do so, should be overcome.

Of course, these short formulations are a too reduced representation of globalisation theory and nobody really expects to find the described developments in this extreme form today. However, a systematic empirical test of globalisation theory is not the target of this article. Instead of this, the main idea followed here is: if such fundamental changes have already been started, some results must be made visible by analysing nation states policy and the action of central non-governmental actors. Environmental policy with its explicitly formulated global tasks and well-developed national institutionalisation serves as a good case for research studies: if there are any changes of the supposed direction, its appearance seems to be most likely in this policy field.

The empirical basis for the following statements are two huge environmental policy programmes in Germany, which include a bunch of main non-governmental actors and some of the central nation state institutions which are co-operating with them on the federal level of the political system (for description of these programmes see below). The cause for scientific investigation was an ex-post evaluation of the sustainability of programme impacts on behalf of the stakeholder organisations. The results of these evaluation studies have already been published (Meyer, Jacoby and Stockmann 2000, Meyer and Jacoby 2001, Stockmann et al. 2001, Urbahn and Gaus 2001). This article is the first attempt to use this material for other than the original analytical interests.

For analysing the effects of globalisation on national environmental policy, Germany is for several reasons a very interesting case. Firstly, caused by the unification with the former GDR at the beginning of the 90s, there had been fundamental and in global context unprecedential changes of the nation state and its institutions. The breakdown of the socialist regime in East Germany left a "political vacuum", filled by a boom of "round tables" talking about political future. Not only the socialist socialisation with its emphasis on equality, but also these basic democratic institutions and negotiations within the short historical period of "peaceful revolution" are an important heritage for the united Germany. Furthermore, because of this historical breakpoint, political reforms had been set on the agenda and gave Germany the chance for a better adaptation of its political system to the challenges of globalisation.

Secondly, the unification of both German states was also a strong input for environmental policy. By analysing the ecological situation in East Germany, experts came to dramatic results and called for making every effort to improve environmental quality. Although this call was not only directed to the nation state, mainly governmental organisations invested an enormous amount of money for environmental protection and reconstruction.[208] Environmental policy in East Germany achieved impressive successes within a very short period of time, especially when compared with the even higher economic subsidies to support the development of market economy. However, this was a kind of Pyrrhic victory: environmental topics lost more and more public interest and, moreover, environmental regulatory measures are blamed for being responsible for the ongoing economic decline and the missing growth rates in East Germany. Because of this historical background, during the last decade high pressure lasted on national environmental policy, which has to be taken into account while analysing national policy programmes and its instruments.

Certainly, Germany is a very special case and therefore research results are not easily transferable. This is not only true because of the reported political development in the last years. Another very important point is the special structure of the political system, which again was relevant for the used way to unify both former German states. Contrary to other European political systems (e.g. France, Italy or Spain) and in many ways more comparable to the political system of the United States, Germany is a federal republic consisting of former 11 and now 16 "Bundesländer" with well-defined political rights and duties. On regional level, districts and local authorities likewise have special rights for autonomous regulations within their territories. The possibilities of national policy are therefore strongly restricted by laws and controlled by several political institutions.

On the other hand, the formation of the European Union and the development of an integrated Euro-

[208] As the Federal Environmental Ministry reported, about 20 bn. Euro had been supplied by national government organizations during the first four years after unification. Since 1995 almost 3.5 bn. Euro annually were intended for environmental tasks in East Germany. This money was supplemented by public investments from the European Union and the Bundesländer. For further information, see Hillenbrand 1996 and Hirche 1998.

pean political system are reducing the possibilities of governmental decisions for the member states. Although the influence of national governments on the EU is still significant, their freedom of action in their own territories is steadily more limited by the newly built and continuously improved transnational institutions. In addition to the above mentioned weakness of national government within the political system, Germany's national political leaders have, compared to most states in the world, less possibilities for realising their own political targets. Some institutionalised forms of participative regulation systems, including national government and several non-governmental organisations, can already be found in Germany, for example the "dual system" of vocational training or the autonomous wage negations ("Tarifautonomie"), which include both employer and employee associations. Furthermore, comparable institutions within environmental policy arise.[209]

To sum it up, Germany might be predestined for denationalisation processes and a transfer of political power to self-regulating non-governmental actors, like it has been described by globalisation theory.

The main target of this article is to show for one example of environmental policy, whether national states are still able to produce some impact by running support programmes or not. The main questions are:

- Who is the initiator of new ideas, developments or trends—nation state or non-governmental organisations? Are those ideas, developments or trends mainly imported from transnational level or own innovations?
- Are there any trends to establish autonomous networks, which already have replaced (or probably will be able to do it in future) state's regulation by some kind of self-regulation? To which extent are these networks a threat to regulative power of national government?
- And finally, how strong are the connections to transnational organisations and institutions? To which degree are non-governmental organisations integrated into transnational communication networks and use them for transferring new ideas to the national area?

Of course, these questions will not be answered perfectly. There are some limitations not only for reasons of size of and time for this publication but also for material at hand and the state of analysis already achieved. First, the collected information and the basic structure of the two evaluated programmes will be outlined. Certain respect will be given to the possibilities and limits to reach the analysis goals. Then, some results of this analysis will be presented 3 and will be interpreted with respect to the above mentioned thesis derived from globalisation theory. Finally, some conclusions about the impact of globalisation on national government will be achieved by carefully generalising the results of this first investigation on the impact of environmental.

Database

Common starting point of both evaluated programmes was the above mentioned criticism of the impact of information campaigns and education measures for changing environmental behaviour. The poor correlation between environmental attitudes and behaviour was recognised and new ways of improved measuring had been reconsidered. One well-recognised and quite successful solution was the A.U.G.E. Project to implement environmental consultancy for private households within several stakeholder organisations (for history of environmental consultancy, see Adelmann 1997 and Gaus 2001; especially on the A.U.G.E. Project, see Gege 1988). In public discussions, this has to be seen as a starting signal for the diffusion of environmental consultancy, although some forms of technical consultancy for environmental problems already existed for years.

In most cases, state organisations (not only but particular national agencies) supported this development by financing consultancy projects. The evaluated programme of the Federal Environment Ministry (BMU) and the Federal Environment Agency (UBA) was one of the most important sources for supporting environmental consulting projects in the 90s. Since 1989 more than 100 projects were financed by BMU, scientifically accompanied by UBA and run by almost the same number of federal associations. Approximately 0.9 Mio. Euro have been annually invested for a great variety of projects reaching from simply financing new editions of still existing brochures to the intensive care for very innovative large-scale pilot projects or national competitions with big media attention. Similar differences can be found by looking at the project-carrying organisations: very small, recently founded and highly specialised associations were supported as well as huge and financially strong federal organisations with long tradition. Some of the most important environmental NGOs e.g.

[209] One example is the attempt to implement a position for coordinating environmental affairs to include the interests of some important environmental associations within the "Deutsche Institut für Normung" (German Institute for Standardization).

NABU or BUND were included just as powerful economic alliances like the building trade co-operation, professional organisations like the architects co-operation or huge public organisations like the German districts association or the federal co-operation of the student administrations (for a complete list of projects and project-carrying institutions, see Meyer, Jacoby and Stockmann 2000).

The concept of environmental consulting has been extensively interpreted to include such a broad variety of projects within the frame of this programme. In a way, it is preferable to speak, more generally, of environmental communication instead of environmental consulting, which is tied together with some determining aspects to justify the hope of improving environmental behaviour. Due to a lack of an appropriate definition, we suggested the following understanding: environmental consultancy is a transfer of environmental information, which is directly oriented towards concrete problems and needs of the target group. The goal of this information transfer from an advice centre to a well-defined group of persons or organisations is to enable them to improve their environmental activities. Contrary to other forms of environmental communication like information campaigns or educational measures which strive for transferring knowledge, environmental consultancy is distinguished by putting the needs of those who are seeking advice into the focus of its work (see the German version of this definition in Stockmann et al. 2001, 36). Therefore, need and action orientation are the reasons why environmental consulting should achieve better results by improving ecological-oriented behaviour patterns.

By supporting such projects, national government organisations hope to reach societal groups which they could not attain by their own information campaigns. Moreover, they want to widen and specialise the offer of environmental information with a strong orientation on transferability to action. To cooperate with federal associations was some kind of symbiosis: while the Federal Environmental Agency (UBA) is able to supply ecological know-how, nation-wide operating co-operations have knowledge of environmental problems and needs of their members. Furthermore, federal associations have frequently used direct communication channels to reach these target groups. The political decision for supporting such projects was by no means the result of external pressure or a transfer from transnational organisations. On the other hand, it is likewise not the logical deduction from a long-lasting environmental policy programme or strategy. Instead, the idea was born in a small department of the UBA, then internally promoted and finally presented to the ministry for decision. Of course, the general framework of environmental discussion supported this process.

To sum it up, national government organisation implemented a new form of environmental policy instrument which slightly expands the three main types regulation, economic instruments and information (e.g. OECD 1994, Verdung 1998, Mickwitz 2000). In a way, the support of environmental consultancy projects as some kind of indirect regulation combines all three types: by using economic instruments, national government organisations try to spread information to target groups which help them to follow state regulations and to avoid negative sanctioning. This innovative policy is unique for Germany and by no means a transfer from transnational level. The implementation of the programme is furthermore not a result of political demands or negotiations with national-oriented NGOs. It is mainly an outcome of everyday work and experience within a national agency.

The second evaluated programme is very special and different from the described one. Realised from 1991 to 1996, this programme is a direct result of the pressure on environmental policy which comes from the German unification. With respect to the environmental reconstruction task in East Germany, the ministry of finance used the proceeds of selling a state-owned enterprise to build a public foundation for supporting environmental projects not only but especially in the East. Even before the institutional formation of this German Federal Environmental Foundation (DBU) was finished, it approved the still most expensive single programme the foundation launched until today (in total approximately 26 Mio. Euro). Initiators of this programme were the federal organisations of both chambers of trade and commerce (DIHT and ZDH), which wanted to expand a pilot project (financed by BMU and UBA) to East Germany. The original programme contained two different parts: an institutional support for the durable implementation of a consulting infrastructure within the chambers of commerce and a so-called "orientation consulting program" which uses this infrastructure to act as a broker for bringing together small and medium sized enterprises and commercial environmental consulting by partly financing these consultations. The targets of this programme were—from the view of the chambers—to help East German enterprises to reduce uncertainty about environmental laws and to calculate the costs for a successful adaptation to these regulations.

By planning the programme, the foundation added comparable components for other target groups

(farms, local authorities and factory committee members), including the German Institute for Urbanistic (Difu), the Chamber of Agriculture in Mecklenburg-Vorpommern/Schleswig-Holstein (LMS), the German Federation of Trade Unions (DGB) and five single trade unions (HBV, IG Bau, IG CPK, NGG and ÖTV), as project-carrying organisations. While LMS and the unions were only participators of an institutional support, there also had been a possibility for local authorities to get subventioned consultations from private advisers arranged by Difu. Contrary to all other project-carrying organisations, Difu was not obligated to keep the implemented institutions for environmental consulting within their own structure after the end of the project (for further information, see Stockmann et al. 2001). The reasons for enlargement of the programme were mainly of political nature: the DBU wanted to avoid political discussions about preferring some societal groups and tried to reach as many groups (and achieve environmental impacts) as possible. Because the foundation did not have any guidelines or experience at this time, political judgements like this had been of great importance.

While for the first programme the nation state was the initiator, for the second programme NGOs (the chambers) played the active part. Although the DBU is not a governmental organisation, it did not have many opportunities for action this time and was highly responsible (much more than today) to the political will of national government. Because the foundation is formally independent of nation state, this influence was indirect and informal—its effect on programme formulation hardly is to judge. One common aspect of both programmes is the support of environmental consultancy (with almost the same targets of DBU and BMU/UBA) and the implementation of an appropriate infrastructure within federal associations.[210] To conclude this description of both support programmes in view of globalisation assumption, it is first to recognise that transnational organisations did not play any role. Both programmes and their basic ideas are exclusively developed in national context. Innovative ideas came both from NGOs and national governmental agencies. Although one had been the initiator, it was mainly a joint affair with a dialog oriented co-operation. As a first result, the strong and intensively used communication channels between NGOs and national government has to be recorded here. Similar results were found by analysing the planning process of each project within both programmes. Of course, there are some differences in intensity and frequency of contact, but if there is some interest in environmental topics, national government is the first address for federal associations to talk to—not transnational or other non-governmental organisations.[211]

But before presenting some further results, it is important to give a short overview on data sources and their limitations. Principally, three different kind of data collection methods had been used within evaluations: analysis of project and programme documents and records, in-depth-interviews of people, who had been involved in project work and representative standardised questionnaires for samples of target and control groups (for overview on the database see Table 1; an English description of the evaluation concept can be found in Stockmann 1997).[212]

However, in a more common sense the chosen examples are able to represent these aspects by showing the great variety of different kinds of projects, associations and support programmes in Germany. One of the great advantages of the material is its completeness. Because of the evaluation targets, it was possible to get a much deeper insight of project and organisations performances. For example, there had been only one refusal to participate in this study—with solely scientific interests, most associations will probably not be willing to do in-depth interviews at that length and to give researchers such freedom to look at its works.

[210] Although the DBU-Program was limited to East Germany, it was a clearly formulated target of the Foundation to support an expansion of environmental consultancy infrastructure to West Germany. With the exception of Difu and LMS, all other project-carrying organizations tried to do so in a more or less successful way. And with the exception of LMS, all organizations are nation-wide oriented and not limited to East Germany or other territorial parts.

[211] If there had been any co-operation projects with participation of several associations, this happened almost in every case because of initiatives by the stakeholders. Both BMU/UBA and DBU wanted to build up continuous networks within different associations, but they succeeded only in a few cases (mainly small environmentally oriented organizations). Co-operations between opposing associations (e.g. employers and employees in the DBU-Programme) failed besides some singular exceptions depending on personal contact of the persons involved.

[212] While in DBU programme, evaluation included all projects and involved organisations, a selection had to be made for BMU/UBA programme. This was a systematic selection by members of the evaluation team and UBA staff, preferring bigger and more important projects. In a statistical sense, neither projects nor associations in investigation are representative for the programme. The use of inferential statistics or generalisations to the origin population of associations, environmental consulting projects or public support programmes are not possible because of sampling procedure.

Methods	BMU/UBA -Program	DBU-Program
Evaluation period	1999-2000	1998-2001
Sampling Procedure (projects/organisations)	purposive sampling	none
Sampling size (projects)	32	5
Involved project-carrying organisations	27	10
Analysis of records, files and documents	complete	complete
Number of in-depth interviews	60	80
Representative interviews with members of target group (featuring control group)	none	1.425
Type of standardised data collection	none	telephone interviews

Table 1: Database of Evaluation Research

Another limitation for analysis of the topic in focus here is the fact that data has been collected for a totally different purpose and therefore there is some information missing. For example, central point of interest had been the projects and not the practice of associations. In some cases there is only rare material on general environmental communication praxis of the organisations available. Therefore, one should be careful especially when doing quantitative interpretations. The following statements on findings are mostly interpretative, representing above all researchers impressions. No doubt, this article has an explorative character and further systematic research is needed.

Otherwise, these problems are very common for any kind of secondary analysis and they are no reason to omit them. Macropolitical assumptions like they have been done by globalisation theory need micropolitical foundations. Applied evaluation research is able to give deeper insights into actors interrelations and the causal effects on policy impacts. Besides the need for further development of scientific quality and for guaranteeing some minimum standards, political research should recognise these results and use them for progress of theories (for an actual balance of environmental evaluation in Austria and Germany, see Meyer and Martinuzzi 2000; for USA, see Rich 1998). It is one target of this article to show the usability of such kind of re-analysing evaluation findings.

Evaluation results

For our evaluation concept, the differentiation between internal and external sustainability of impacts is very important (Stockmann 1997, 76ff.). Internal sustainability refers to those structures and institutional regulations implemented during the life of a project and to "what is left behind" of this project infrastructure after the official project end. External sustainability focuses on the dynamic aspect of project ("what is set in motion") and questions for the on-going performances and diffusion of its services.

With respect to the research questions of this article, the existence of durable networks (and their correlation with the supported projects) is of prior interest. Are there any internal structures for environmental communication, are they a result of supported projects and are they able to survive without national governmental support? Moreover, are there any management instruments implemented which could be used for a professional learning process of the organisation? And finally, in which directions innovative information flows and who is involved in internal communication networks—these questions have to be asked with special request to transnational cooperation (are new ideas coming from transnational, national or regional level).

By laying the focus on external dynamics, again the inclusion in communication networks is of central meaning (as one important requirement for successful diffusion of information, see Meyer 2000). For whom environmental communication offers were made and are they directed to regional, national or transnational arena? Are international networks with other than the own clientele and association structure included of any importance for this offer? Are they the motor for developing new ideas or are international levels reached by diffusion processes?

Figure 1 puts together some central findings on the internal environmental communication structures within federal associations and the impact of national governmental support programmes on them. First, it is to mention that 75% of the 37 investigated NGOs have still some kind of internal environmental communication structure (e.g. specialised staff, regular meetings or reports, in-service training courses, continuous public relations work on ecological topics etc.). Especially projects with the explicit target to build up durable internal infrastructure or networks had been very successful. In 66% of organisations with an existing internal environmental communication infrastructure, this was a direct result of supported projects. Mostly, the construction of such a structure had not been possible or would have re-

quired much more time without states support. Especially for smaller environmental associations with low financial budget, the sponsored manpower was the most important factor for institutionalisation. Compared with more powerful organisations, which are able (and because of self-interest they do so) to care for this structure continuously, sustainability of internal infrastructure is only possible for them by acquiring new grants—which in almost every case come from (national) state organisations. Therefore, nearly in half of all organisations, the environmental communication infrastructure could not survive without support from the nation state. In conclusion, the existing environmental communication structure within Federal association is mainly a result of nation state activities and not an autonomous development, originally founded (and further maintained) because of important self-interests.

The results for internal communication networks (not limited to environmental topics), connecting different parts and levels of the investigated association with the target to transfer information on various topics (not only ecological ones), are almost the same. Again a huge majority of associations still has such a kind of networks, but on the contrary, these networks are seldom a result of supported projects. If an internal process to establish environmental communication infrastructure has been pushed, it seems to be continued by self-interest forces to include environmental topics in existing internal networks and not to build up own communication structures. Besides some smaller organisations, which are able to manage a direct personal dialog between staff and members, all associations already had communication networks before project begin. In most cases, these networks include international contacts, too.

With respect to external networks, connecting various associations or interest groups, the conclusion is different: now nation state initiative is irreplaceable. Compared to internal networks external ones are rather seldom and mostly arise because of nation states interests (sometimes connected with the possibility to get grants or any other kind of support). Of course, there are some weak ties to comparable associations working within the same policy arena, but with the exception of environmental organisations, no trial to build up self-regulative networks can be found. Beyond their original targets and tasks, NGOs are conservative in the sense of avoiding innovations and in a way they act very autistic. To sum it up: without the initiative of nation state organisations and the possibility of public support, no networks between associations would exist. If such a network is established by self-interest, the reason is, in many cases, to opposite threatening nation state decisions. But this are short term co-operations instead of durable communication networks.

By mentioning this, it could not surprise that associations environmental communication offer as one part of external sustainable impacts of communication

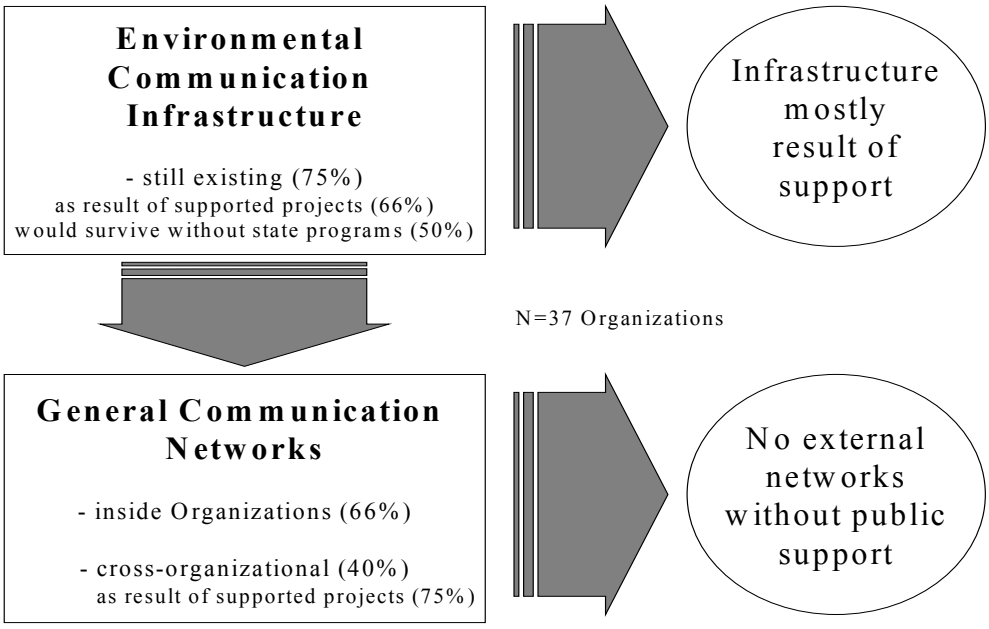

Figure 1: Internal Environmental Communication Structures

structure is quite often exclusively directed to their own members (figure 2). Again the importance of public support programmes is obvious: only one third of the investigated organisations had some kind of environmental communication offer before project beginning (not surprising mostly environmental organisations). However, the most interesting result is here that federal associations are badly informed about the impact of their project measures and in many cases they do not seem to be very interested in getting any information about them at all. Because of the federal structure of nearly every association, distributing information to members is mainly a task for regional parts, who are suspicious of any regulative demand from the national part of their own organisation. In most cases, the implementation of a national department within the association structure happened only for political reasons, especially for common public relation work and for lobbying nation state members and organisations. Therefore, federal organisation staff judges project success first by (national) public and political impacts, not by goal attainment and the usability of project services for their own members. International or global orientation is still the exception: although almost all associations are somehow in contact with associations from other (mostly European) countries (and to keep in touch with them is one task of national departments), only a small minority of associations have communicated about the supported projects, their outcomes, or environmental topics at all with their international partners or other transnational institutions. It is remarkable that international communication about environmental topics is by far restricted to tourism trade organisations. Even ecologically oriented organisations do not communicate extensively on the transnational level. For conclusion, by running environmental communication projects national political benefit has priority for federal associations—even more than the usability of the offers for their own members.

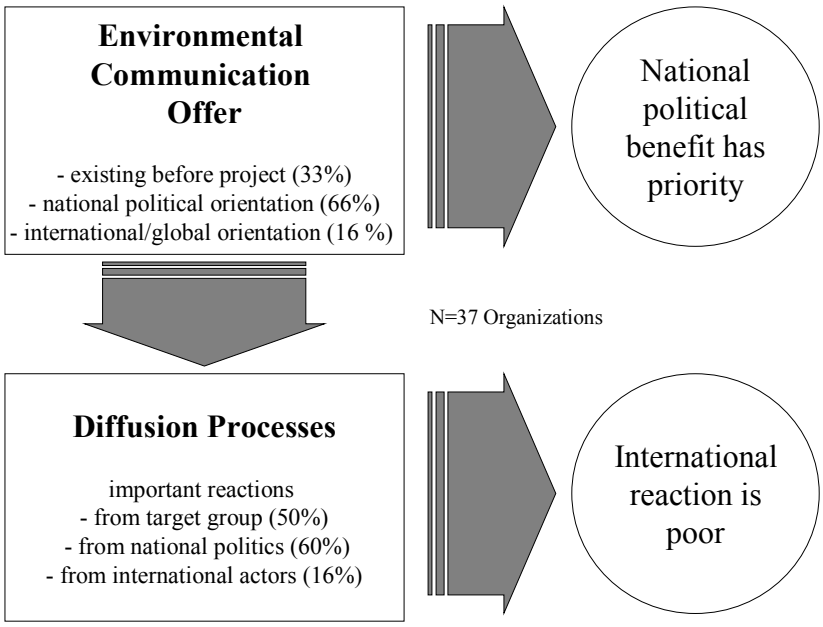

Figure 2: External Environmental Communication Processes

None of the evaluated federal associations has a professional management system to systematically collect data for impact and feedback control. Only some smaller environmental organisations even try to get some information which can be used for improving their offer. However, there is no valid information existing on diffusion processes of project services. Occasionally reactions from target groups or national politics (mostly positive ones) were reported to the associations staff. Requests from other countries or transnational organisations were only reported from a very small group of associations. International reactions are just as seldom as the adoption of innovations from other countries or transnational organisations. Environmental communication policy of NGOs is strongly directed to national authorities and internal use, and their communication networks are constructed likewise.

To conclude these findings with respect to the three research questions above:

(1) For environmental consultancy as a new and cooperative form of regulating environmental behav-

iour, both nation state and non governmental organisations brought in project ideas. Nation state organisations as well as NGOs are "trendsetters" and this is one reason, why the evaluated programmes were such a great success with respect to internal sustainability. In many cases, initiatives from nation state (especially from federal environmental agency) led to the first engagement for environmental topics of some associations. While most associations developed innovative ideas as well, trends from transnational level are rarely recognised within associations. Although the discussions about sustainable development had been taken into account, this had been more often a reaction to nation states initiatives.

(2) Federal associations, which developed a new infrastructure for environmental communication, included them into existing communication networks. With the exception of some very small associations, they all had well-developed internal communication structures long before project start. If there are any efforts made for building up or to improve communication networks including other associations, these activities are always pushed by nation state. Although there do exist some weak ties to organisations from other countries, they are rarely used for developing new and autonomous ideas for environmental communication. Associations behaviour is oriented to adapt to state's regulation and there are yet no trials to change this.

(3) On one hand, nation state and its regulation system is of highest importance to federal associations, while activities from transnational organisations and institutions had only been perceived by a small minority. On the other hand, new ideas and innovations are seldom diffused on an international level. Transnational communication networks of NGOs are still very weak and no change had been recognised for the last 10 years. National departments of federal associations are strongly aligned with nation state and its agencies. Even the EU is, up to now, only of secondary interest.

Conclusion

As mentioned before, it is not easy to generalise the findings of our evaluation studies on environmental communication support programmes in Germany because of the peculiarity of this case. Nevertheless, in this section some general conclusions will be presented and should more be seen as thesis for further research than as final results. Focus will be set on the differences of governmental and non-governmental organisations with respect to their contribution for environmental policy. Especially some reasons, why the three assumptions derived from globalisation theory failed will be put up for discussion.

Nation state and its institutions are often criticised for being inflexible and equipped with an overblown bureaucracy. However, the impact of this public criticisms of governmental organisations is frequently underestimated by most people. There are several efforts made to modernise state organisations by "new public management" improving customer orientation and public-friendliness. Our example proved governmental organisations (Federal Environmental Ministry and Federal Environmental Agency) to be able to develop policy innovations and to achieve satisfactory impacts by using support programmes. There are also some attempts to introduce management instruments like monitoring and evaluation to get feedback's for further improvement of policy. Of course, nowadays state bureaucracy needs too much time to change and to adapt to new societal developments—but they are aware of this problem and they are trying to enhance services step by step.

While nation states and its institutions seems to be "slowly learning" organisations, it is difficult to judge about non-governmental organisations in general. However, contrary to nation states, the organisational performance of NGOs seldom is publicly discussed. If there is any criticism of management practice, it normally comes from members or organisation parts. Federal associations in Germany usually have strong regional sub-organisations and only a weakly equipped national department, which tasks are largely reduced to public relations work and lobbying. They often do not have the capacity to develop new ideas or policies.

Furthermore, membership control instead of public control leads to strong restrictions when expanding the tasks of national departments of federal associations. While regional sub-organisations are aware that national departments do not exceed their authorities, members ask, whether resources are spent for their interests or not. Therefore, associations often act as egoistic actors, trying to enforce their own goals and do not mention public interest at all. If they cooperate, they do it for their own targets and not for community. In fact, this is not to criticise—but because of this lack of public control, NGOs are not able to build up and continually care for networks which could replace state organisations.

Compared with governmental organisations, NGOs are much faster in acting but they are less interested in continuously working on topics, which they assume not to be of high priority for their members. However, national departments only notice the needs

and problems of their members if they report it to the regional part of the association and this sub-organisation itself informs the national department. There is no systematic surveying of needs nor any impact monitoring of the services offered to the members or some kind of professional project management. Therefore, it is hard to argue that associations are "learning organisations" and have advantages compared with governmental organisations for these specific points.

Within federal associations in Germany, the regional sub-organisations are the leading parts. National departments are strongly directed to the nation state and its institutions. There are well-developed formal and informal communication channels to national government, agencies, single politicians, and organisation staff. After the formation of a common opinion within the association, it is the target of the national department to transfer this opinion to national policy. Because of personal contact and communication networks, there are several possibilities for co-operation and innovation transfer between national governmental organisations and federal associations.

Although international discussions sometimes will find entry into this opinion-leading process, there are no communication networks, which are *regularly* able to bring in or to spread new ideas from or to other countries. Again governmental organisations and their longstanding communication structures seems to be better in taking up innovations or to diffuse them into transnational policy fields (especially within the European Union). Moreover, nation state organisations have better contacts to scientific research institutes and use their expertise to improve political action.

For example, the sustainable development discussion had some significant impacts on both evaluated programmes and especially pushed the trial to establish environmental communication structures in associations. This discussion was largely introduced to the environmental policy dialogue by state organisations, but there was also an important input from some NGOs (especially environmental organisations). Unfortunately, a systematic analysis of the diffusion process of the topic "sustainable development" is still not available. Our data suggests that the origins of its rise to one of the most important discussion subjects is merely an outcome of intensive dialog between state and non-state actors (with state organisations doing the first step), supported by existing, highly developed communication structures.

This might be a special result for Germany with its relatively week nation state and therefore well-developed orientation on co-operation with NGOs and other political forces. To come back to the three assumptions, the first one (governments tend towards Moderation instead of Regulation) proves to be wrong—German national government and its agencies have a long-lasting tradition to involve various politically relevant groups formally and informally in decision processes.[213] This might be the reason, why globalisation processes do not have any visible effect on governments action.

The second assumption, non-governmental actors are "learning organisations" while national government organisations suffer from "bureaucratic sclerosis" definitively proves to be wrong. German federal associations do not have any institutions or management structure which will allow them to be "learning organisations". Probably, there might be more "bureaucratic sclerosis" in national government, but there is also more "bureaucratic efficiency". Moreover, government organisations are aware of the problems and caused by public pressure there are some trials to implement a modern form of "new public management".

Finally, the third assumption that the role of individual actors (as they were respected by political actors) changes to get more chances to participate by giving NGOs more power, seems to be wrong too. Because associations represent particular membership interests and they do not have any systematic monitoring to get valid and representative information about the needs and the will of their members, especially big associations have no advantages in representing peoples interest in political decision processes. Today, a self-regulated nation without nation state seems to be unthinkable. There are even no tendencies in Germany for a development in that direction observable. And if de-nationalisation without any comparable transnational institutions would lead to more democratic participation is at least questionable.

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[213] For the relevance of informal communication channels between members of parliament and government see Schwarzmeier (2001).

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The Privatisation of International Environmental Governance

by Tanja Brühl[*]

At the beginning of the 21st century, governance systems at the international level are undergoing a tremendous transformation which can be summarised as a change from international to global governance. Whereas in international governance the makers as well as the addressees of norms and rules have been states and intergovernmental institutions, in global governance, by contrast, non-state actors are also partners in the governance systems.[214] In addition, different levels of governance (such as the local, regional, state, and global level) become more important. We define the growing inclusion of private actors, both non-governmental organisations (NGOs) and business actors (such as Transnational Corporations, TNCs), in all stages of global governance as privatisation. Although the private actors differ tremendously in their motivation to act and although they have different goals, both contribute to the transformation of the character of regulation. Private actors are contributing to processes of de-governmentalisation (*Entstaatlichung)* and commercialisation *(Kommerzialisierung)* of world politics (Brühl et al. 2001). Assessing the impact of privatisation on legitimacy leads to contradictory results. One the one hand, privatisation enhances the governance system's effectiveness (or output legitimacy), since private actors deliver new resources to the governance systems. On the other hand, Western ideas are becoming even more influential and dominant in the area of norms and rules since most private actors come from industrialised countries. Thus privatisation is contributing to a growing imbalance between Southern and Northern representation.

Since privatisation was first observed and is well developed in environmental policy, I will focus on this issue-area. In the first part of this section, I will briefly introduce the concept of privatisation of world politics in general. Some examples of the privatisation of environmental governance will clarify the meaning of de-governmentalisation and commercialisation. After this, I will discuss the consequences of privatisation for the legitimacy of governance systems.

Privatisation as a new phenomenon in international relations

Privatisation, the growing significance of private actors in all stages of global governance, results of different driving forces. Most important, globalisation has contributed to the increased relevance of non-state actors in two ways. Firstly, deregulation and economic liberalisation strategies, implemented both on the domestic and on the international level (by states and intergovernmental organisations), have increased the number and influence of TNCs in world politics. Secondly, as the demonstrations in Genoa in 2001 have shown, a growing number of individuals are protesting against the negative effects of globalisation, such as the growing gap between rich and poor. In the last few years they have formed a heterogeneous network, which might be interpreted as a rudimentary form of an evolving world community (cf. Albert et al. 2000).

In addition, democratisation processes, which took place in many developing countries in the 1980s and supported the formation of civil societies, are a source of privatisation, and the technological revolution (with the increased availability of information and the minimised time lag in communication) is another. With the end of the Cold War, privatisation tendencies have speeded up, since ideological controversies are now less important and commercialisation has spread across the world (Hummel 2001, 35-38).

All these factors contribute to the growing significance of private actors in quantitative and qualitative terms. Whereas for most of the 20th century, private actors only tried to influence agenda-setting processes by lobbying states and international institutions (see for instance, for climate change and biodiversity policy, Arts 1998), today, they are involved in all stages and phases of world politics: they are active partners in agenda setting, norm and rule formulation, and implementation.

However, private actors' contributions to governance systems vary along a continuum whose two extremes are pure intergovernmentalism and complete self-regulation or private authority (see Cutler, Haufler and Porter 1999a, Wolf 2001, 7). Whereas some decades ago most regulations were more or less inter-

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[214] Global governance is understood here in empirical-analytical terms, as a changed governance structure (Brühl/Rittberger 2002). Some authors use global governance in a more normative sense encompassing what governance at the international level should look like (Commission 1995; Nuscheler/Messner 1996). For an overview of different conceptualizations of global governance see Brand et al. 2000.

governmental, today a growing number of regulations include private actors. Recently, more and more problems have been regulated by public-private partnerships (PPP) and, as a specific form, trisectoral networks, which are compromised of states, business actors and representatives of civil society groups (cf. Reinicke and Deng 2000). An important factor influencing the degree of state-centrism is the type of problems, which need to be regulated. In general, private actors play a more prominent role in so-called "soft issues", such as human rights or environmental policy. For example, for many years private actors have been partners in implementing projects in development assistance (Ludermann 2001), and in human rights policy private actors co-operate closely with international institutions in order to expose the fact that some states do not comply with human rights norms (Liese 2001). But the influence of private actors is also growing in the issue-area of security. Private security companies are taking charge of the security of public spaces in the mega cities and mercenary forces are fighting in civil wars (Lock 2001).

The group of private actors is very heterogeneous. Private actors differ in respect of the topics they are concerned with, the goals they want to achieve, and the strategies they use in order to reach these goals. Looking at the motivation of the private actors, two groups can be distinguished. NGOs, as non-profit organisations, act in order to establish or enforce specific norms to promote a common good. These norms may be of public interest or may serve the particularistic interests of a specific group. TNCs are interested in maximising their profits, so they calculate costs and benefits very carefully (Hummel 2001, 32). They are motivated by instrumental goals and try to promote the well being of the organisation itself ("self-help" motivation, Risse 2002). Although these two different goals underlie private actors' actions, both contribute to the transformation of governance, to de-governmentalisation and to commercialisation. The term de-governmentalisation (*Entstaalichung)* is used here to refer to the character of regulations. Whereas up until the 1980s most conventions were of a compulsory character, today an increasing number of regulations are voluntary. There are often no compliance mechanisms, especially in purely private regulations. The commercialisation *(Kommerzialisierung)* of world politics is the second aspect of privatisation. Here, the focus is on the underlying assumptions of the obligations. A growing number of regulations are based on market principles and self-interest instead of regulatory principles and public interest (Hummel 2001, 32-33). These two aspects of privatisation may occur at the same time and reinforce each other.

Privatisation in international environmental governance

The privatisation of world politics is particularly well developed in the environmental area, where private actors perform key roles as independent bargainers and as agents of social learning (Princen and Finger 1994). Private actors have been important partners in international environmental governance from its very beginning. In 1972, at the first environmental world summit (United Nations Conference on Human Environment) in Stockholm, hundreds of NGOs tried to lobby international negotiators (Morphet 1996). Since then, the number of private actors and the extent of their influence in international environmental governance have grown. Most international regimes, which are the most important pillars of environmental governance, involve co-operation with private actors. For example, private actors are allowed to participate in the conferences of the parties to international regimes and to circulate papers as well as give speeches. At the UN Conference on Environment and Development (UNCED) in Rio in 1992, more than 1400 NGOs were officially accredited to the international negotiations, and tried to influence the conference from the inside. Several thousand NGOs participated in the parallel NGO conference, where they tried to develop alternative ideas as well as demonstrating against governmental actions. Not only "green NGOs" but also business actors are now trying to influence world politics. Therefore, they have built up their own networks, such as the Business Council on Sustainable Development.

Both groups of private actors, NGOs and business actors, are mainly interested in lobbying national and intergovernmental fora. Most of the time these groups represent opposing positions, as the climate change negotiations clearly show. The Global Climate Coalition (GCC) as a coalition of the US oil and coal industries, resisted moves to restrict fossil fuel use, arguing that a climate change convention would harm US industry, and tried to discredit the scientific basis of climate change negotiations (Carpenter 2001). The Climate Action Network as the umbrella organisation of environmental NGOs, tried to lobby states so that they would agree on more stringent measures to prevent the greenhouse effect. [215]

Although private actors tried to influence environmental policy from its very beginning, until recently

[215] An overview of non-state actors involved in climate change policy can be found in Gough/Shackley 2001, 341-345.

governance systems had been state-centric. In the 1960s, some industrialised countries implemented domestic policies to limit environmental degradation. Since the 1970s, nation-states have agreed on multilateral treaties instead of acting unilaterally because the scope and nature of most environmental problems is regional or even global (such as the loss of biodiversity, the greenhouse effect, or the ozone hole). Other problems have local effects, such as growing water scarcity or the degradation of the soil, but because they occur universally, global strategies need to be implemented (Simonis and Brühl 2002: 102). Since problems cannot be solved at the state level, the territorial form of governance by autonomous and sovereign nation states is inadequate (Goldblatt 1997, 73). To cope with these problems effectively global arrangements need to be established, which is difficult for both technical and political reasons. Technically, a complex array of causal factors leads to environmental degradation. Sometimes, governments are simply inadequately informed about specific problems and do not know how to solve them. Politically, it is difficult to agree on regulations since there are only a few strong proponents of vigorous or strong comprehensive environmental management (Haas 1999, 107). Since private actors offer resources such as technical and political knowledge and because they are (at least partly) interested in establishing regulations, they are welcomed as partners in environmental governance systems (Brühl 2001).[216]

Until the mid-1990s, *lobbying* was the strategy that most private actors used. Since then, private actors have also used other political strategies. Intergovernmental governance systems have been supplemented by tri-sectoral networks (e.g. the World Commission on Dams) and private regulations (e.g. ISO standards). The Rio+5 conference in 1997 was a turning point. Because environmental problems are getting worse, private actors have increasingly been bypassing governments altogether and have been forming partnerships with other private actors (Florini 2000b, 236). Private actors are now *partners in norm- and rule-setting* processes, as the case of biodiversity policy shows. The need for a global strategy to prevent the loss of biodiversity was first articulated by the IUCN. UNEP took up the idea and initiated international negotiations. In addition to their (successful) agenda setting, IUCN and other NGOs played a prominent role in the negotiation process leading to the Convention on Biological Diversity (CBD). The first draft of the convention was even written by IUCN. Most of the time, NGOs had access to the international negotiations and they were allowed to give oral statements during the negotiations (Brühl 2001, 149-156). In addition to (trying to) influence intergovernmental negotiations, private actors are *setting norms and rules on their own*. Most significant, TNCs are increasingly agreeing on codes of conduct, thus undertaking a commitment to comply with specific labor and environmental standards in the production process. By signing codes of conduct TNCs show that they are prepared to act in accordance with inter- and transnational rules, hoping that this will attract new customers and markets (Braun 2001). Sometimes, codes of conduct are agreed in order to save a company's reputation and prevent consumer boycott, as was the case in the textile industry (Haufler 2000, 130). Private actors also *implement* international agreements, such as the Agenda 21, which was adopted in Rio. Since states accepted the relevance of private actors in the implementation process, they dedicated chapter 27 to these actors. Furthermore, private actors play an important role in *monitoring* states' behaviour. Under the ozone regime, for instance, private actors can inform the secretariat about the failure of a specific state to reduce CFC to the agreed targets. The secretariat can then inform the Implementation Committee, which proposes sanctions to the members of the parties (Brühl 1999). Being involved in all stages of political processes, private actors are contributing to a transformation of the character of governance systems, the de-governmentalisation and commercialisation of world politics.

PRIVATISATION AS DE-GOVERNMENTALISATION

The growing inclusion of non-state actors in environmental governance systems contributes to the transformation of the character of regulation. There has been an increase in the proportion of voluntary (rather than compulsory) measured in the regulations agreed upon. This is especially true of most private regulations and tri-sectoral networks.

A good example of the de-governmentalisation of world politics is the World Commission on Dams (WCD), which was founded in 1998 in response to the NGO-Declaration of Curitiba with its key demands to establish an independent commission and to conduct a comprehensive review of all large dams. The task of the WCD had been to conduct a global review of dams and to develop internationally accepted criteria and guidelines for decision-making on the planning, design, construction, and operation of dams. It consisted of twelve commissioners, who represented all stakeholders (states, NGOs, and

[216] It is widely acknowledged that this is the reason why epistemic communities play such a prominent role in environmental policy. For the concept of epistemic communities see Haas 1992.

TNCs) as well as all affected regions of the world (Khagram 2000). In its report, launched in November 2001, the WCD gives rather general recommendations instead of formulating specific and compulsory rules. Accordingly, seven key principles were identified that need to be upheld such as gaining public acceptance and exploring alternatives to dam building. For those who called for strong regulations, namely NGOs, this result is therefore rather disappointing. The effectiveness of this process remains unclear, since there is no guarantee that stakeholders will comply with these new principles. This is because neither review nor compliance mechanisms have been established, nor has the WCD's successor, the Dams and Development Program (DDP) (established in September 2001) the right to review compliance with the WCD recommendations and to sanction non-compliance. Its task is only to disseminate information and to act as a catalyst to support multi-stakeholder dialogues.

Voluntary regulations can have positive effects for the actors and the common goods. However, because of the lack of compliance mechanisms, the effectiveness of such regulations is not guaranteed. By comparison, intergovernmental regulations tend to establish a growing number of non-compliance mechanisms that sanction non-rule based behaviour.[217]

PRIVATISATION AS COMMERCIALIZATION

In recent years there have been changes in both the character of environmental agreements (from compulsory to voluntary measures) and in the underlying assumptions of these regulations. Today, more and more agreements reflect market principles and self-interest instead of regulatory principles and public interest (Hummel 2001, 32-33).

The commercialisation of world politics can be observed in the climate change regime. With the adoption of the Kyoto Protocol in 1997 it became obvious that the reduction of the greenhouse effect would require close co-operation between states and private actors. The Kyoto Protocol allows states to reduce their emissions by using flexible mechanisms such as international emission trading, joint implementation, the clean-development mechanism, the bubble concept, and the inclusion of sinks. Private actors will play an important role in the implementation of these flexible mechanisms since the very object whereby emission reduction is achieved is mostly built and owned by a private company. By investing in other countries, these companies are becoming key actors in the global efforts to reduce emissions. States that seek to reduce their emissions will have to interact with these companies. This means that the decision of TNCs to invest in other countries determines how and where emissions will be reduced. Decisions will not be taken according to the public interest, rather, emissions will be reduced in accordance with market interests. In addition, private actors will probably be involved in drawing up and functioning of the certification system which will monitor the states' reduction rates, since states' bureaucracies will not be able to deal with this adequately (Maier 2001, 293). Finally, one could even argue that emission trading will be organised by private actors only, since they are more familiar with market mechanisms (ibid.). One example is the Royal Dutch/Shell Group, which launched a pilot phase of an internal emission trading system (Shell Tradable Emissions Permits System, STEPS) in 2000. Participants in STEPS are committed to reduce 2% of their emissions in the next three years either by buying permits or by investing in their business to reduce emissions and then selling their surplus permits (Margolick and Russell 2001, 21). The first prototypes of new public-private partnerships to reduce emissions were also established in 2000 by the World Bank and the European Bank for Reconstruction and Development (EBRD) (Carpenter 2001, 317).

As the example of new public-private partnerships in the climate change debate demonstrates, privatisation of (environmental) governance can lead to a more effective implementation of international treaties. Governments need to interact with private actors who are not only contributing to a great extent to the problem itself (such as the greenhouse effect) but who can offer solutions as well. Since many states argue that they could not fulfil their obligations to reduce emissions by domestic means only, the effectiveness of the climate change treaty seems closely linked with the public-private partnerships.

The impact of privatisation on the legitimacy of governance systems

At first glance, therefore, one could argue that privatisation is improving the results of regulation, meaning that it is enhancing the governance system's effectiveness. This impression may even be strengthened by taking into account the fact that private actors play

[217] States tend to establish specific compliance mechanisms in newly founded international institutions based on jurisdictional or quasi-jurisdictional dispute settlement bodies, thus taking an important step toward the legalization of world politics (Goldstein et al. 2000). They thus acknowledge that non-compliance frequently does not derive from a conscious decision to disregard norms and rules but from the member states' inability to abide by them, as well as from a certain incomprehensibility of the norms and rules themselves (Chayes/Chayes 1995).

an important role in the agenda-setting processes and that they provide valuable input (expertise) in formulating international norms and rules, as the WCD has demonstrated. At the same time, however, including private actors in governance systems also challenges the democratic legitimacy of the decision-making procedures, since these actors are not elected to take part in decision-making procedures. Although some NGOs claim to represent civil society, they tend to be self-selected and often unrepresentative elites (Keohane and Nye 2000, 23). An investigation of the legitimacy of "privatised governance systems" is necessary. I will therefore discuss how legitimacy is defined and then go on to how privatisation alters the governance system's legitimacy.

LEGITIMACY IN INTERNATIONAL RELATIONS

Legitimacy as a normative and theoretical concept tries to explain why and when a system of rule is acceptable and why people adhere to rules. Since nation-states have over a long period been the most important loci of authority, most scholars have discussed the question of the conditions under which nation-states' systems of rule can be seen as legitimate. According to Max Weber (1980) legitimacy derives from the people's belief in legitimacy.[218] In other words, legitimacy is defined as "the fact that people voluntarily accept domination on the grounds that they believe in its normative rightfulness" (Steffek 2001, 5). This belief may be held on affective, religious, or rational grounds. Today, the rational version is the most important; accordingly, the belief in the legality of rule and norm systems is important.

If we want to assess the legitimacy of the privatisation of world politics, we need to transfer the concept of legitimacy from the state to the global level. However, this is problematic since the structures of the two levels vary enormously. Most importantly, an attempted analogy between the two levels is misleading because no central hierarchy exists at the global level. The absence of a world state[219] does not mean that no structures of authority exist at all. Obviously, a growing number of social institutions exist between states and other actors. International regimes and organisations play a prominent role in norm- and rule-setting processes. Instead of a central authority, "the domination structures are multiple, issue-specific and by no means all-encompassing" (Steffek 2000, 8). The second important difference between the nation-state and the global level refers to the people. Whereas the *demos* can be easily identified at the nation-state level, there is no sign of a global *demos* (or world civil society).

Since the characteristics of the nation-state and the global level differ enormously, and especially because no clearly defined group equivalent to 'the people', whose belief in legitimacy determines whether a governance system is accepted as legitimate, can be identified globally, Weber's concept of legitimacy needs to be replaced. Sandeniemie (1995) has proposed an alternative typology of legitimacy at the international level that draws a distinction between institutional and task-related legitimacy. Institutional legitimacy is claimed and granted for the exercise of political power as such and can be based (following Weber's conceptualisation) on democratic, traditional, or charismatic legitimacy. Task-related legitimacy is claimed and granted for the accomplishment of specific goals or on the basis of goals achieved. A similar differentiation between (successful) goal attainment and the acceptance of (democratic) decision-making has also been developed by Fritz W. Scharpf, who proposes distinguishing between the input and output dimensions of legitimacy (Scharpf 1997, 1998). These categories are the ones that have been most frequently used by IR scholars to investigate legitimacy beyond the nation-state. Input-oriented legitimacy implies that "collectively binding decisions should originate from the authentic expression of the preferences of the constituency" (Scharpf 1998, 2). In other words, those who are affected by a decision should participate in the decision-making process. Output-oriented legitimacy "refers to substantive criteria of *buon governo,* in the sense that effective policies can claim legitimacy if they serve the common good and conform to criteria of distributive justice" (Scharpf 1997, 153).[220] Input- and output-oriented legitimacy should not be seen as two different concepts, since they influence each other. Democratic processes, for instance, guarantee input legitimacy. For output legitimacy these processes are of instrumental value, because compliance and enforcement mechanisms can only work if people have been involved in the

[218] This normative notion of legitimacy is problematic. As David Beetham (1991, 9) argues, people's *belief* in legitimacy may derive from a 'good public relations campaign'. He therefore introduces an empirical version of legitimacy, which refers, *inter alia*, to the way in which people's behavior conforms to the established rules.

[219] Most IR scholars agree that creating a world state is neither feasible nor desirable because the establishment of a world state would require a worldwide legal monopoly of force which could only be accomplished by restraining forcibly various forms of local and national resistance against this idea (Brühl/Rittberger 2002, 30).

[220] It is quite difficult to assess whether a governance system is producing "effective" solutions. For international (environmental) regimes, Oran R. Young (1994, 140-160) distinguishes six dimensions of effectiveness, including problem-solving and process effectiveness. These dimensions could be helpful in analyzing output legitimacy closely.

decision-making procedures.

LIMITED LEGITIMACY

Since the mid-1990s, the legitimacy of international governance as a state-centric system has been a topic of heated discussions. Most authors agree that the legitimacy of international governance is undermined by several factors. At the nation-state level, governments are gradually losing their monopoly on the representation of their societies due to globalisation as a consequence of de-bordering of states (Brock and Albert 1995, Zürn 1998). The congruence between the rulers and the ruled is therefore being undermined. This trend is being intensified by the growing number of decisions that are taken on the international or global level, since the general public or particular stakeholders are frequently excluded from the deliberations. This phenomenon is referred to as a *"participatory gap"* that undermines input legitimacy (see Reinicke and Deng 2000, viii, Kaul et al. 1999, xxxvi; Brühl and Rittberger 2002, 26). In addition, international governance systems have obviously not been effective enough in dealing with existing problems and have thus failed to achieve output legitimacy. Three major governance gaps have contributed to the undermining of the output legitimacy of international governance systems (Brühl and Rittberger 2002, 25). (1) The term *jurisdictional gap* is used to refer to the fact that public policy-making is still predominantly national in both focus and scope, so that transnational or global risks cannot be regulated adequately (Kaul et al. 1999, xxvi). (2) Policy-makers and public institutions lack policy relevant information and analysis as well as the necessary policy instruments to respond to the daunting complexity of policy issues (Reinicke and Deng 2000, vii), which indicates that an *operational gap* has opened up. (3) Finally an *incentive gap* exists, meaning that the operational follow-up of international agreements is under-developed; the result is that moral persuasion, or shaming, is frequently the only mechanism available to force states to comply with international obligations (Kaul et al. 1999b, 451)

Although this analysis of the status quo is accepted by most scholars, no consensus exists on the question of whether or how governance gaps can be narrowed. There are two particularly controversial questions relating to the legitimacy of international governance systems: the (non)existence of the *demos* beyond the state level (which is relevant for input legitimacy), and the impact of international institutions on democracy (which is relevant for both input and output legitimacy).

Input legitimacy can only fully be established at the global level when a common identity, a transnational *demos,* exists. Although most scholars agree that today no such transnational *demos* exist, they disagree on the prospects of its future emergence. Pessimistic scholars argue that no evidence of an emerging identity beyond the nation-state level can be found, even at the European level where its existence would be feasible due to integration processes. According to these scholars, identity-formation at the nation-state level has been a historical peculiarity, which has been closely linked with democracy and nation-state building (see e.g. Kielmansegg 1996). The pessimistic scholars propose that the lack of a "we-identity" also heavily influences decision-making processes. As long as no transnational *demos* exists, majority decisions cannot be used as a political instrument because minorities will only accept being outvoted if they are part of a "we-identity" (Scharpf 1998, 6). Since distributive agreements mostly rely on majority decision-making, public policy requires on political co-ordination on the international or global level. Optimistic scholars share the pessimists' assumption that there is no common identity, but argue that either a transnational *demos* is evolving or that at least some sectoral *demoi* come into existence. The first group assumes that some elements of a transnational *demos* exist in specific world regions (Brock 1998). Michael Zürn (2001, 195-200) distinguishes five elements that characterise a *demos*: acknowledgement of mutual rights, trust, public spirit, public discourse, and solidarity. These components also exist beyond the nation-state, though their development differs according to space and sector. In the OECD world, for instance, some of these elements are well developed, whereas others such as solidarity and public discourse are only weakly developed beyond the nation-state. The second group is not optimistic about the emergence of a transnational *demos* (Abromeit and Schmidt 1998). Instead they discuss the emergence of several sectoral *demoi.* These evolve not in a specific territory but in issue-areas (the principle of functionality instead of territoriality), exist only for a period of time (latency period instead of stability), and the members do not know each other personally (anonymity). The "we-identity" is grounded on either rational interest calculation or emotional beliefs which is why communication processes are very important.

The second controversial aspect with regard to legitimacy is whether international institutions undermine or guarantee input and output legitimacy. Klaus Dieter Wolf (2000) argues that governments do not cooperate in international institutions just to regulate conflicts, but also to protect themselves against socie-

tal interference and control. By binding themselves in institutions, governments therefore construct a new structure of authority, which contributes to the democratic deficits of governance systems. These democratic deficits are thus not accidental but result from the strategic actions of governments. That means that international institutions, although they contribute to problem solving and therefore to output legitimacy, undermine the democratic legitimacy of international (or global) governance. Michael Zürn (2001, 190) argues against this view, claiming that "institutions are not the problem, but part of the solution to the problems of modern democracy". International institutions are helping to address the problem of incongruence between social and political spaces and bring those affected by a political decision into the decision-making (ibid.). In addition to enhancing democracy at the international level, international institutions are a prerequisite for democracy at the nation-state level because they guarantee specific rights (Brock 1998, 287).

Obviously, all these authors discuss the legitimacy of international governance systems where states and intergovernmental institutions are the most important actors. This discussion is nonetheless useful for an assessment of the impact of privatisation on the legitimacy of governance systems because it clarifies how private actors are challenging this legitimacy. In the following passage, I argue international institutions play a very important role in international environmental governance. Since most institutions have been opened up for non-state actors, they minimise the participatory gap. By regulating behaviour, they also contribute to output legitimacy. It therefore seems plausible to think that institutions enhance legitimacy at the global level. Private actors are increasingly involved in the work of the institutions. Most of these actors have organised themselves in different networks which indicates that a *sectoral demos* exists. At least in the industrialised countries, some sectors of societies have been active participants in environmental movements and these have created some transnational NGOs. Most environmentalists know a lot about the sources of environmental degradation and how to handle these problems. They act at all political levels, from local to global (Princen and Finger 1994).

THE IMPACT OF PRIVATIZATION ON LEGITIMACY

The growing inclusion of private actors in governance systems not only contributes to the transformation of the character of regulation (degovernmentalisation and commercialisation), but also alters the legitimacy of governance systems in its input and output dimension. With regard to input-dimension, it is generally acknowledged by IR scholars and diplomats alike that bringing private actors into intergovernmental decision-making procedures enhances legitimacy. This is why many international institutions have opened up their deliberations to private actors. However, it is important to note that the degree of openness differs between the institutions (Florini 2000b, 215). From a theoretical point of view, the growing inclusion of private actors can be interpreted as a step toward establishing deliberative democracy at the global level. In general, deliberative democracy assumes that legitimate decisions result from the public deliberation of citizens (Bohman and Rehg 1997b, ix). The members of a pluralistic association have diverse preferences, convictions and ideals. In free and reasoned debates they reach consensus on a particular solution (Cohen 1997). For deliberative democracy beyond the state level, Barbara Finke (2001, 178-179) identifies three pillars of deliberative democracy: (1) In communication and negotiation processes arguing is more important than bargaining; (2) those who are affected by a decision take part in the decision-making processes; (3) participants inform the transnational public about the deliberative processes.

In environmental governance systems, some elements of deliberative democracy can be detected. Private actors are allowed to observe the decision-making processes and, even more important, to actively take part in the deliberations. Thereby they are transforming intergovernmental negotiations into (more or less) public deliberations by citizens and state representatives. By bringing in additional information and knowledge and participating in the arguments, they contribute to the identification of possible ways to handle problems. Because states assume that private actors bring in additional knowledge and thus enhance negotiations, they are opening up their deliberations (Brühl 2001). The composition of private actors has changed over time. Whereas NGO representatives have taken part in international negotiations for a long time, the activity of business actors is a rather new phenomenon in international negotiations. Private actors also contribute to the transparency of the political process by informing the public about the deliberations (Take 1998). An important tool they use is publishing daily coverage of the negotiations both in print and in the electronic media, such as the *Earth Negotiation Bulletin* or *ECO*. According to their own estimates, they inform 25,000 people around the world on the latest developments. However, these publications are also often used to inform the participants in the negotiations about what is

going on.

This positive assessment of the impact of privatisation on governance systems, however, is only partly convincing because of the non-accountability of private actors and their regional imbalance. Some critics argue that private actors should not be included in decision-making beyond the state level because they are not accountable for their behaviour. While state representatives are elected, members of NGOs and TNCs are only accountable to their own organisation or to the market (Cutler, Haufler and Porter 1999b, 369), which is why the character of regulations is shifting towards de-governmentalisation and commercialisation. However, two different arguments refute the claim that private actors are illegitimate. As long as private actors do not decide authoritatively on public policy, they neither have to have a democratic structure nor do they have to be elected by (sectoral) *demoi* (Beisheim 1997). Furthermore, NGOs are legitimated by the moral authority acquired through a credible commitment to basic norms or to general welfare, their expertise, and representational skills (Wolf 2001, 16). In addition, most NGOs have some government's implicit approval through the legal recognition extended to such organisations (Florini 2000, 233). One can therefore conclude that as long as decisions are taken by governments in a way where private actors do not take part in voting procedures, the claim concerning non-accountability is not convincing.

Another criticism of the positive assessment is that it does not take into account the composition of the private actors. This is more justified. Most private actors are from industrialised countries, so that the interests of people from developing countries are underrepresented. At the third and fourth conferences of the parties to the UN Framework Convention on Climate Change (Kyoto 1997 and Buenos Aires 1998), for example, only approximately one third of the private actors came from Asia, Africa, or Latin America; the other two thirds came from Europe or North America (Walk and Brunnengräber 2000, 141-147). This reflects the limited resources private actors from the South have in terms of money and ability to articulate their interests in international negotiations and is also related to language problems. The regional imbalance is only one indicator of the under representation of the societal interests of developing countries. In addition, NGOs from developing countries cannot get their voices heard as well as Northern NGOs because transnational NGO networks dominate the discussions at the conferences of the parties, which also influence the topics that are discussed. Whereas local NGOs are interested in dealing with a variety of specific regional problems, transnational NGOs are mostly interested in a narrower range of topics (ibid.). The existence of this regional imbalance indicates that not all of those who are affected by a decision take part in the decision-making process. Actors based in developing countries either take not part in the deliberations or, when they do, find that the deliberations are dominated by Northern ideas. In the future this imbalance could even be strengthened, because more and more business actors are taking part in international environmental negotiations—especially since Kyoto in 1997.

To sum up, private actors' inclusion in governance systems enhances input legitimacy because more actors are heard who are affected by the negotiation. On the other hand, differences in resources lead to an unbalanced representation of private actors. Thus the three pillars of deliberative democracy beyond the nation-state identified by Finke (2001) do not fully exist; only some of their elements can be detected. To enhance input legitimacy, ways to secure access of all interested private actors to the governance systems or a system of checks and balances need to be established.

Regarding the impact of privatisation on the output legitimacy of governance systems, the situation is complex. On the one hand, private actors enhance the output legitimacy of formerly intergovernmental governance systems by bringing in additional resources such as knowledge and values (Brühl 2001) so that problems are dealt with more adequately. This is especially true in environmental negotiations where science is essential to understanding the nature of environmental problems and identifying ways of dealing with these problems (Haas 1999, 103). Since many NGOs "provide scientific and earth-centred knowledge via their own research" (Princen 1994, 34), they are contributing to a learning process and thus to more effective international agreements. Private actors are sometimes parts of epistemic communities (Haas 1992), which play an important role in creating the consensual knowledge that is the basis of (international) negotiations. In addition to taking part in negotiations, private actors enhance output legitimacy by acting as partners in the implementation of agreements. Private actors help to diffuse international norms into domestic behaviour, and they also monitor states' behaviour and initiate non-compliance mechanisms. In the field of human rights, a complex "Spiral Model" has been developed which specifies the conditions under which private actors (local human rights NGOs and transnational advocacy organisations) exert pressure on a norm and rule violating state so that it is forced to change its behav-

iour (Risse, Ropp and Sikkink 1999). In environmental policy, the explanatory power of this model has not yet been tested. However, it is widely acknowledged that NGOs play an important role in monitoring states' behaviour.

Whereas output legitimacy is enhanced by the inclusion of private actors in formerly intergovernmental governance systems, the growing number of private regulations undermines the output legitimacy of governance systems. As already mentioned, more and more private regulations have come into existence in recent years (Cuter, Haufler and Porter 1999, Braithwaite and Droha 2000). Most of these private regulations deal with specific topics. Private regulations are particularly concerned with four identifiable goals: establishing international standards, ensuring the security of transactions, maintaining industrial autonomy by pre-empting or preventing government regulations, and responding to societal demands and expectations of corporate behaviour (Haufler 2000, 126). Questions concerning welfare, social justice, or sustainable development, to name just a few other topics, are seldom regulated by private actors. This means that private regulations do not (always) serve the common good or conform to criteria of distributive justice. Rather, they serve particularistic interests. In this respect privatisation and particularly commercialisation is undermining output legitimacy. Moreover, output legitimacy is undermined because governance systems, as a result of de-governmentalisation, often have no compliance mechanisms they can use, as the example of the WCD has demonstrated. That means that even if an agreement serves the common good, its implementation is not guaranteed since there are no sanctions that can be imposed in case of non-compliance.

Conclusion

It has been demonstrated that the impact of privatisation on the legitimacy of governance systems is complex. Private actors enhance input and output legitimacy by providing resources and helping to implement the agreements. However, they also contribute to the dominance of Western (or Northern) ideas in governance systems so that only specific problems are dealt with. This is particularly true of purely private regulations.

To avoid these negative effects, privatisation needs to be regulated and some sort of checks and balances system needs to be established. Such a system should guarantee that negotiation systems are as inclusive as possible by providing for a balance of Northern and Southern ideas. States and intergovernmental organisations should also assure that all relevant problems are dealt with.

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Global Discourse, Local Struggle: The Reconstruction of the Local in Local Agenda 21 Processes

by Angela Oels[*]

This article is a case study of the mechanisms of global-local governance, using the example of Agenda 21 and its implementation as Local Agenda 21 in a German case study area. The analysis is informed by Robertson's (1995) concept of 'glocalisation', which emphasises the growing importance and direct interdependence of the local and the global level before the background of a weakening nation state. The analysis is based on the assumption that 'globalisation' needs to be (re-)interpreted locally in a process of 'localisation' in order to take effect. Taking into consideration theories of new social movements (Browne and Keil 2000, Keil 2000), we are guided to expect local struggles and local reinterpretations in this process of localising global discourses. As global discourses are mediated by local struggles and reinterpreted in this process, we are led to expect diverse rather than homogenous impacts on the local level.

The following analysis is guided by three questions:

- How does a global programme like Agenda 21 get translated into local rationales and practices?
- What are the factors which mediate between global programme and local implementation?
- To what extent is the global programme reinterpreted and changed in the process of gaining local influence?

A methodology is needed that allows us to study the local impact of the global programme Agenda 21. As the core impact of Agenda 21 has been a shift of local discursive rationales and practices and to a much lesser extent material changes, a constructivist epistemology (Blatter et al. 2001, Litfin 1994, Macnaghten and Urry 1998, Maier 2000) seems well suited to guide the analysis. Local interpretations of the global programme Agenda 21 and resulting local practices are put centre stage in constructivist research approaches.

The following analysis draws on Foucauldian discourse theory (Bublitz et al. 1999, Sharp 1999) and more specifically on a variant developed by Marteen Hajer (1997). A discourse is a specific way of perceiving the world and acting upon it. What can be legitimately said and done is restricted by the terms of discourse. Hajer defines a discourse "as a specific ensemble of ideas, concepts, and categorisations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities." (Hajer 1997:44). Each discourse has a symbolic and a material component. At each point in time, struggles in the political arena will be conducted with reference to a certain dominant discourse while competing alternative discourses are marginalised. In the context of this theory, Agenda 21 is conceptualised as a global discourse offering new terms of reference to the local actors. Some local actors will adopt the global discourse almost unchanged while others will try to confine its influence. As the result of local struggles and reinterpretations, the local terms of discourse are transformed and new practices emerge. This process shall be analysed in the German case study Olching.

The following analysis will draw on interviews, focus groups and document research carried out during two periods of field work (a total of 3 months) in Olching in December 1997/January 1998 and November/December 1998. Moreover, the findings were updated on the basis of a telephone interview carried out in February 2000. The data was originally gathered in the context of a stakeholder based evaluation of Olching's Future Search conference over a period of two years (Oels 2000a).

The remainder of the article will move from the global discourse on Agenda 21 to the local interpretation and implementation of Agenda 21. The aim of the article is to study the transformation and reconstitution of local discourses as a result of local struggles around Agenda 21. In a concluding section, repercussions for the global level and theoretical implications are discussed.

Global discourse

This section will explore the characteristics of the global Agenda 21 programme. The main rationales and recommended practices of the global discourse on sustainable development are spelled out as they form the foundation upon which all Local Agenda 21 processes draw.

Agenda 21 (UN 1992) is a non-binding plan of action on sustainable development signed at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992. Agenda 21 is the outcome of two decades of debate about how to bring the interests of development and nature

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conservation together (Sachs 1995). The UNCED conference itself was the result of the work of the Brundtland Commission (WCSD 1987), which successfully coined the term 'sustainable development' as a possible synthesis of environment and development interests. Sustainable development prescribes a procedural and a substantial component—both of which are still contested in their interpretation (Brand and Jochum 2000). The Brundtland Commission emphasised intra- and inter-generational justice as a principle that should guide the use of natural resources:

> Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. (WCSD 1987:43)

The substantial component of sustainable development implies a development path that equally considers social, ecological and economic requirements. The equal consideration of these three spheres is best epitomised in the so-called three-pillar-model of sustainable development. The procedural component of sustainable development prescribes the involvement of all stakeholders in a dialogue or co-operative process with the aim of achieving a consensus on a local interpretation of sustainable development. The local interpretation of sustainable development should then inform an inspiring vision for the future of the local community. One of the major assumptions of Agenda 21 is that win-win solutions can be easily found when all stakeholders are brought around the table.

Agenda 21 is a prime example of 'glocalisation' because it is the first UN document which recognises cities and local communities as key players in the process of implementing a global programme:

> Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives. (...) As the level of governance closest to the people, they play a vital role in educating, mobilising and responding to the public to promote sustainable development. (UN 1992, Agenda 21, chapter 28.1)

The very existence of chapter 28 in Agenda 21 was the result of on-going lobbying by local government associations and NGOs like the International Council for Local Environmental Initiatives.

The ambitious task for local governments was defined solely in procedural terms:

> Each local authority should enter into a dialogue with its citizens, local organisations and private enterprises and adopt 'a local Agenda 21'. Through consultation and consensus-building, local authorities would learn from citizens and from local, civic, community, business and industrial organisations and acquire the information needed for formulating the best strategies. The process of consultation would increase household awareness of sustainable development issues. Local authority programmes, policies, laws and regulations to achieve Agenda 21 objectives would be assessed and modified, based on local programmes adopted. (UN 1992, Agenda 21, chapter 28.3)

After the UNCED conference, most European national governments did little to inform the local government level about the ambitious goals spelled out for them in chapter 28 of Agenda 21 (BMU and UBA 1999, Lafferty 1999). Local government associations and NGOs like the International Council for Local Environmental Initiatives (ICLEI) played a leading role in spreading the knowledge about chapter 28 to the local communities around the world. A more detailed analysis of the mechanisms of diffusion, the key actors and institutions involved in spreading the idea and practice of Local Agenda 21 in Germany and the UK can be found in Geißel and Oels 2000. In this article, I will concentrate on the study of one German case and analyse how Agenda 21 took hold in local rationales and practices.

Local struggle

One way of understanding new patterns of multi-level governance is to conduct case studies. This section will explore how the global programme Agenda 21 took effect in a German case study area. Which actors promoted the programme? Which local interpretations of the programme were generated? What sort of resistance was hit and how were local meanings and practices transformed in the process of struggles surrounding the implementation of Agenda 21? First, the German case study area is introduced. In the following subsections, the struggle between a pro- and a contra-coalition is described and the resulting local transformations are presented.

THE CASE STUDY AREA: GEMEINDE OLCHING

Gemeinde Olching was selected as a particularly innovative and promising case study for my PhD thesis (Oels 2000b) because it was the first German town to use the method Future Search conference as a kick-off for its Local Agenda 21 process. The Future Search conference (Weisbord and Janoff 1995and1996, Oels 2002) is a tool for citizen participation developed by the Americans Marvin Weisbord and Sandra Janoff which embodies all requirements of Agenda 21 as if it had been invented primarily for that purpose.

Gemeinde Olching is a commuter region on the verge of a town West of the Bavarian capital Munich. The formerly rural area has experienced exponential

growth in housing construction and population size since the construction of a fast train connection to downtown Munich in 1972. 80% of the land is still used for agricultural purposes but only 1% of the population nowadays works in the agricultural sector.

Olching's Local Agenda 21 process was initiated by the local adult education institute which conducted a 'special programme' of seminars on Agenda 21 from 1996 onwards. The Mayor acted as patron of the seminar series. One of the seminars led to the formation of a Local Agenda 21 group which has been meeting regularly ever since.

THE PRO-COALITION: ACTORS, DISCOURSES AND PROCESSES OF INSTITUTIONALISATION

Those who joined in Olching's Local Agenda 21 group were members of environmental organisations and the green party and brought with them an intrinsic interest in the concept of sustainable development and Agenda 21. The group described its own aims in close analogy and wording to the original Agenda 21 text:

> Our aim is to agree upon and implement a commonly supported Local Agenda 21 as a local roadmap for a sustainable community in the 21st century. We attach special value to a dialogue process leading to a consensus about future developments which involves all stakeholder groups and pays equal attention to the economic, ecological and social interests of all those affected. (leaflet)

When Olching's Local Agenda 21 group was looking for a way of institutionalising a process of stakeholder involvement, one of its members discovered the Future Search conference format (Weisbord and Janoff 1995and1996). A Future Search conference brings together 64 carefully selected participants who spend three days working out visions and action plans for the future of their community. The conference uses small and large group work and alternates between homogenous and mixed small groups. In the first phase of the Future Search conference, the participants review the past of their community in a global and personal context. They then assess present trends which affect their community and identify their personal contributions to those trends. Moving into the future, the participants then work out and perform to each other ideal future scenarios. In a plenary session, the common ground of these scenarios is identified and contested issues are filed away without further discussion as 'unresolved differences'. In a final conference phase, small groups work out action plans designed to implement the common ground visions.

Particular attention needs to be paid to the selection of the participants to a Future Search conference. The aim of a Future Search conference is 'to bring the whole system into the room' (Weisbord and Janoff 1996) which means that the full spectrum of perspectives on an issue should be present in the room through careful selection of the participants. Each perspective is represented by one participant—irrespective of the fact if this view is shared by 10% or 90% of the population.

In Olching, the Local Agenda 21 group identified the major stakeholder groups and worked hard to win the support of influential members of each of those groups. The result was a "more or less representative steering group" (leaflet). The steering group spelled out the aims for the Future Search conference once more in a language that closely resembles the wording and contents of the global discourse on Agenda 21. The steering group considered criteria like age, sex, membership in voluntary groups, party membership and town neighbourhood when selecting the conference participants. The participants were recruited to represent the sectors education, environment, health, politics, church, voluntary groups, agriculture, business, social issues and administration. The local councillors were treated as no more than one of the stakeholder groups. The steering group put one councillor from each party on the invitation list. As recommended in the Future Search handbook (Weisbord and Janoff 1995), the conference participants were mostly selected out of the pool of known local activists ('movers and shakers'), and only very few could be considered to be 'ordinary citizens'. The participants were invited to get involved in a private capacity rather than as delegates of their organisations. The Future Search conference handbook (Weisbord and Janoff 1995) recommends this in order to increase the potential for learning and co-operation. The steering group conscientiously followed the participant selection procedures recommended in the Future Search handbook in order to pre-empt any criticism.

THE CONTRA-COALITION: ACTORS, DISCOURSES AND PROCESSES OF INSTITUTIONALISATION

Nevertheless, the participant recruitment to the Future Search conference provided a focal point for the formation of a so-called contra-coalition to a Local Agenda 21 process in Olching. When the 30 local councillors discovered in summer 1997 that only seven of them had been invited to the Future Search conference and that their party had been given no opportunity to nominate somebody for the conference, they were alarmed. Those councillors not invited to the conference felt excluded and threatened:

> Well I believe that ... many people {councillors} felt personally offended that they had not been invited to

> the Future Search conference, because apparently they are not important enough. And every councillor believes of himself that he is important in the community. If he is not included, something must be going wrong... Some councillors will as a result withdraw completely... will remember this and later, they will be against anything that originates from the Future Search conference. (interview with excluded councillor)

In order to discredit the Future Search conference, the excluded councillors were able to draw on the discourse of representative democracy. The main rationale of the representative democracy discourse runs that political power can only legitimately be held by elected representatives of the people. The Future Search conference with its self-selected organisers and 64 hand-picked participants lacks any legitimacy from the perspective of the representative democracy discourse. The councillors identified a threat for representative democracy in the set-up of the Future Search conference:

> There is a danger that a group that lacks democratic legitimacy—they are not elected, but instead are constituted according to some rules—so a group that lacks democratic legitimacy but—I assume—is politically very active, may push us to political decisions, which the majority of the people don't want. (interview with excluded councillor)

The local media picked up on those two conflicting discourses and represented them as a power struggle between representative and direct democracy. In an article headed "Council need not be afraid to lose its position", the local paper Fürstenfeldbrucker Tageblatt wrote: "Some councillors—as elected representatives of Olching—are already afraid that others {non-elected conference delegates} will intervene in their job."

In a second line of attack, the councillors drew on the terms of the Future Search conference to undermine its legitimacy. They doubted that the organisers had been successful in recruiting the 'competence' into the room needed to represent all relevant views. The councillors criticised that their parties had not been able to nominate delegates to the conference themselves. The councillors demanded to see the invitation list and wanted to initiate changes to it. The steering group however refused to allow any intervention. The conference organisers were hard pressed to argue that they were not aiming to circumvent the Council:

> Instead of party politics and binding decisions, the aim is to derive a vision for the entire community. In the spirit of the Rio declarations, the discussion shall be carried out in a bottom-up fashion and include issues like environmental protection in voluntary groups. 'This is not circumventing the Council', ensures {the main organiser} (Fürstenfeldbrucker Tagblatt, 23.-24.08.1997)

LOCAL TRANSFORMATION: THE TRANSFORMATION OF DISCOURSES AND INSTITUTIONALISED PRACTICES

With a media campaign reporting the uproar of the councillors in summer 1997, the conference organisers were forced to change their strategy. Originally, the organisers had avoided any official contact with the Council because they feared that the entire initiative would be stopped by councillors afraid to lose their power base. The aim of the organisers was to establish broad public support for the conference that would in the end be stronger than Council resistance:

> When I heard that some people were building up Agenda 21 in a bottom-up fashion, I ... said: 'That's it, that's the best idea of all!' Because—when we initiate it up from below, we will build up a power base that in the end will be strong enough to force the politicians to do exactly what we want, because it is the will of the people. (member of the Local Agenda 21 group)

After the media attention focused on them, the steering group could no longer continue to prepare the conference without the official backing of the elected councillors. Therefore, a delegation of the steering group approached the Council in November 1997. The Mayor had prepared a draft motion, which asked the councillors to welcome the initiative and to ensure the organisers that the Council would adopt the outcomes of the Future Search conference as corner stones of their future policymaking. The draft motion was a well-intended effort by the Mayor to win legitimacy for the conference outcomes. The councillors harshly objected to the suggestion that yet unknown conference outcomes could inform their policymaking. Again, the discourse of representative democracy was drawn upon to argue that a conference of non-elected delegates could not legitimately instruct local policymaking. After a heated debate, the councillors adopted a motion saying that the Council would at least take notice of the conference outcomes and consider their value for policymaking. This was an important success for the steering group, because it meant that the excluded councillors stopped fighting the conference. The conference took place successfully with 63 participants in January 1998.

Local discourse: The outcomes of the Future Search conference

This section will shed light on the outcomes of Olching's Future Search conference in the context of the requirements spelled out in Agenda 21. The conference outcomes will be treated as a local discourse that emerged as a local variant of the global discourse on Agenda 21. A first subsection will turn towards the procedural aspects of sustainable development before a second subsection will discuss the substan-

tive outcomes.

On the procedural side of implementing Agenda 21 locally, Olching's Local Agenda 21 group had selected the Future Search conference method in order to bring together a broad spectrum of local stakeholders and to involve them in the formulation of a Local Agenda 21 strategy as prescribed in chapter 28 of Agenda 21. On this procedural side, Olching's kick-off event was a true success story:

> For me, it is a major achievement that we brought people around one table or in one room who usually avoid crossing each other's path. This is gigantic. It may sound basic, but it is truly exciting that all of them came together in one room in a good atmosphere. (interview with a member of the steering group)

Olching's conference participants were enthused by each other's little theatre performances of future scenarios. However, looking back on the outcomes of that session, some conference participants felt that they had been misled to develop unrealistic dreams which could not pass the slightest test of reality. In their view, more time should have been spent on realistic action planning. The Future Search conference model also perfectly embodied the win-win spirit that is at the core of Agenda 21. The conference is structured in a way that identifies common ground statements to which all can agree while contested issues are taken off the agenda without further discussion. Through this mechanism, conference participants are prevented from arguing. While this is perfectly in line with Agenda 21, some of Olching's key issues could not be addressed in the win-win framework—for example the future of the nearby military airport or the traffic calming of the main road, because these issues are contested ones. Moreover, the kind of measures which result from win-win settings are usually soft ones like information, education, communication and research (Polanyi 1999). While the Future Search conference provided a fruitful setting for co-operation, its structure also restrained the range of topics and measures that could be addressed (Polanyi 1999).

With regards to the substantive outcomes which resulted from the Future Search conference, the main surprise for the Local Agenda 21 group was that ecological, economic and social issues were not at all equally addressed in the conference action planning. The visions and action plans were instead dominated by social concerns. Top of the list was a project called 'Growing old in Olching' which was aiming for a better integration of and care for pensioners in the local city life. The participants themselves realised upon reflection that the lack of environmental issues on their agenda was potentially at odds with the requirements of the official Agenda 21 programme.

Summing up, it must be said that the local interpretation of the global Agenda 21 discourse has given a primacy to process over substance. By choosing a method that perfectly resembles the requirements made by Agenda 21, i.e. by treating those invited as experts in their own right, Olching's Local Agenda 21 group has given up all power to influence the contents of the conference proceedings. Entering into a constructive dialogue with open outcomes resulted in a local interpretation of sustainable development that turns a deaf ear to environmental issues and North-South issues. This is also a structural feature of the Future Search conference method, where the interests of future generations or developing countries cannot as easily be brought into the room as more local concerns. The environmentalists present at the Olching conference certainly did not use their presence to advocate the interests of nature. One environmentalist later admitted in an interview that the idea of participating in a private capacity had distracted her from playing a more leading role on environmental issues.

The above analysis has shown how the format chosen for the institutionalisation of Olching's Local Agenda 21 process directly influenced the substantive outcomes. The local discourse on Agenda 21 in Olching is characterised by a social bias and reference to social community and social responsibility. The discourse and those carrying it nevertheless continue to make reference to the global Agenda 21 programme and identify themselves as the local implementation of the global programme.

Local transformation

This section will assess the local transformations that followed the completion of Olching's Future Search conference. The aim is to trace how the struggle between pro- and contra-coalition resulted in a mutual adjustment of both and led to the adoption of new political practices in Olching beyond the Future Search conference itself.

The main arena for the discursive struggle between the pro- and the contra-coalition were the institutions of representative democracy, namely Council sessions and Council committee sessions. Publicity was provided by the local media who closely followed the power struggle between the two actor-coalitions. It was interpreted as a sign of arrogance by the Council that it first took notice of the conference outcomes nine months after the event took place. Even nine months after the conference, a significant amount of

hostility was observable within the Council, as this media clipping shows:

> Even very tame revolutionaries have a hard time: When after months of hard work by the participants of Olching's Future Search conference, a list with aims and ways to reach them was presented {to the Council}, the debate in the planning committee focused on the question in which form the criticism could best be included in the draft motion. (SZ-FFB Neueste Nachrichten, 26.-27.09.1998, S.5)

The councillors took a vote that the Council administration should take note of the conference outcomes and comment on their possible implementation through the Council. The Council administration was however only obliged to do this as long as their regular duties were not impaired, which in fact meant that most never reacted at all.

As a result, the pro-coalition changed course once more and decided to adopt some of the formal practices of the discourse on representative democracy. In January 1999, the Mayor imposed a Council vote that was to decide if a Local Agenda 21 process was officially wanted or not. As the Bavarian state government was offering additional financial resources in the case of a positive vote, the councillors were surprisingly easy to win for a Local Agenda 21 process. Nevertheless, little progress was made on the implementation of the Future Search conference outcomes during the first two years after the conference. In February 2000, a follow-up conference to the Future Search conference decided to put the original conference outcomes back on the local political agenda by writing draft motions and finding a councillor to put this motion before the Council. The local activists worked hard to draft solid motions with reasonable financial plans. This was the state of things towards the end of my research period.

It is striking that the pro-coalition more and more adopted the rationales and practices of the discourse on representative democracy. The practices of the pro-coalition changed from creative drama performances to formal motion drafting for the Council. The pro-coalition was hoping to break the resistance of the contra-coalition by conforming to the rationales and practices of representative democracy. Towards the end of my research period, it was not clear, if this strategy would deliver the desired success.

The pro-coalition was not the only one that went through a transformation of their rationales and practices in the face of local struggles. The contra-coalition had kept a critical eye on the Future Search conference. To their own surprise however, they had to admit that the Future Search conference had demonstrated that there were actually citizens out there who wanted to be involved and who were willing to give up an entire weekend in order to think about the future of their community. Besides, the Future Search conference had shown that this could be done in a very constructive and creative atmosphere—much different from the practices of party politics. The Mayor, who had acted as patron of the Future Search conference, decided to seek Council support for a similar participatory process on the future of Olching's main road and possible traffic calming. The Council discussion about this proposal was notably different from earlier times when the councillors reacted with outspoken hostility to the idea of citizen participation. I conclude that the discourse on representative democracy was extended to embrace more elements of the global discourse on Agenda 21, more specifically the idea and practice of citizen participation.

Theoretical implications

I have been able to show how the global discourse on Agenda 21 hit local resistance in the form of the discourse and institutions of representative democracy. Framing Agenda 21 as a global discourse with rationales and practices which compete for hegemony with those of the locally embedded discourse on representative democracy allowed me to highlight the competing claims for legitimacy raised by both discourses. Mediated through the formation of a pro- and a contra-coalition, the rationales and practices of both competing discourses underwent transformations and produced specifically local variants. The pro-coalition adopted formal practices of representative democracy (like motion drafting) in order to pursue their goals of a Local Agenda 21 process. The contra-coalition recognised that citizens could be constructively involved in the local governance process and integrated citizen participation from the Agenda 21 discourse in their rationales and practices. In that way, both discourse coalitions made a contribution to raising the complementarity of the two originally competing discourses.

With regards to the global discourse on Agenda 21, I was able to show that it underwent dramatic reinterpretations in the process of being translated into local practice. In the case of Olching, the local pro-coalition institutionalised the Local Agenda 21 process by drawing on the Future Search method, which embodies all procedural requirements spelled out in Agenda 21. The outcomes of Olching's Future Search conference however had a clear social bias and did not live up to the discursive demand that social, ecological and economic issues should be addressed

equally and in an integrated fashion. Olching's local interpretation of the global Agenda 21 discourse put a primacy on process over contents instead of aiming for a synthesis of both.

Agenda 21 is a prime example of a global programme, consisting of rationales and practices that has informed local policymaking around the world. The local implementation of Agenda 21 varies widely from community to community. One reason for this is that Agenda 21 is a 'soft' form of governance, which in order to have any local impact needs to be integrated in local rationales and practices. The example of Gemeinde Olching has shown that the local impact of global discourses is never homogenous but always mediated by local actor coalitions. Global discourses emerge as competitors to local rationales and practices and are therefore bound to hit resistance and initiate local struggles. A transformation of local rationales and practices is required in order to translate global discourses into local practice. The discourse analytical perspective has been helpful in highlighting these mechanisms of 'soft' governance.

Future research on Agenda 21 should not be limited to assessing top-down impacts. Instead, the bottom-up impact of the various Local Agenda 21 initiatives on the global Agenda 21 discourse should be assessed. The World Summit on Sustainable Development in Johannesburg in September 2002 will present an ideal opportunity for that, as the effectiveness of Agenda 21 will be evaluated and new plans of action will be drawn up.

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Can Decentralisation Save Bolivia's Forests? Uncovering the Institutional Incentives for Municipal Governance of Forest Resources

*by Krister Andersson**

The scientific understanding of the institutional and environmental impacts of decentralisation reform remains quite limited in most countries, even where such reforms have been carried out for some time. The implications of this lack of knowledge can be quite serious for policy decisions, as it prevents the decision makers from acquiring information that is needed to adjust and fine-tune the mix of policy instruments. As a consequence, the effect that these instruments actually have on natural resource users' decisions may remain unknown, and may lead to unexpected and undesirable results. Ideally, decentralised governance systems would have monitoring programmes that study the effects that natural resource management policy has on resource users' decisions, but few non-industrial countries have such programme in place (Burki et al. 1999).

The existing literature on decentralisation lacks empirical evidence on the institutional and environmental impacts of the decentralisation reforms. This study addresses this shortcoming by analysing how the recent decentralisation reforms have affected the institutional conditions for successful forest governance. Successful municipal forest governance depends on many factors and this article focuses on perhaps the most fundamental of them all: the ones that are believed to determine whether a municipal government decides to do something about forestry issues in its jurisdiction or not. Based on interviews with three different municipal government actors in 54 randomly selected municipalities in the Bolivian Lowlands, the research takes stock of and compares how municipal administrations are performing under the new, decentralised regime. The study argues that the mixed outcomes of municipal forest governance depend on the variable strength of crucial political incentives for municipal governments to get involved in the forestry sector.

The study shows that the decentralisation reforms in Bolivia's forestry sector have the potential to generate several positive outcomes for natural resource management. The decentralised forestry regime opens up for the possibility of improving the legal access to and formal tenure of forest resources among Bolivia's large population of rural small holders. The achievement of this potential, however, is by no means automatic and should not be taken for granted just because the forestry sector is now "decentralised". For one, it would require municipal governments and forest users to work together to construct effective institutional arrangements that provide less ambiguous forest property rights for forest users. The theoretical possibility that this would occur does not mean it *will* occur, or even that it is likely to occur. A positive outcome depends on a wide range of variables. The two-fold purpose of this article is to first assess empirically what sources of positive institutional incentives exist for municipal governments to care about forestry, and second to assess to what extent these incentives are actually in place in Bolivian Lowland municipalities.

The theoretical and empirical analysis points to fundamental limitations for municipal forest governance in the non-industrial world because (1) While the *legal* conditions may be favourable in the decentralised forestry regime, several *institutional* and *socio-economic* barriers exist to achieve effective and efficient municipal governance of forest resources; (2) The relative strength of a combination of four institutional incentives appears to determine whether a municipal government is likely to provide certain public services or not, and (3) About half of Bolivia's municipal governments lack a sufficient level of institutional incentives that would motivate them to provide public services in the forestry sector.

After clarifying a few central concepts used, the article reviews Bolivia's decentralisation reforms and discusses past empirical studies on the effects of these. The third section defines the hypothesis that will be tested empirically in the article, and describes the methods used. The fourth section of the article presents the results of the empirical analysis. Finally, the fifth section discusses the implications of these results for policy and future areas of research.

Definitions

DECENTRALISATION

Decentralisation is understood as the "the assignment of fiscal political and administrative responsibilities to

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lower levels of government" (Litvack et al. 1998). In this study, decentralisation refers to government functions only.[221] Because of the particular emphasis that the Bolivian reformers assign to the role of municipal governments, the main focus of this study is on the *municipal* mandate in the forestry sector.

COLLECTIVE ACTION

Collective action involves the efforts of a group of two or more individuals to achieve a common good. A collective action problem occurs when the actions of group members are interdependent: one person's reward (outcome) is dependent on the actions of others (Sandler 1992). Collective action problems are pervasive and exist at all levels of society. Sometimes collective action problems are solved by the individuals immediately involved in the situation, but sometimes external intervention may be necessary. For policy makers and analysts interested in proposing effective policy instruments it is crucial to understand when collective action can be expected to be provided for by citizens themselves and when external interventions by a government may be necessary. Both policy effectiveness and efficiency turn on this issue. This study uses collective action theory to elucidate how decentralisation reforms have affected the prospects for Bolivians to solve a series of collective problems in their forestry sector.

INSTITUTIONAL INCENTIVES

Institutions are defined as formal and informal rules that are, in fact, followed by most affected individuals. Such rules structure *incentives* in human exchange, whether political, social, or economic. *Incentives,* then, mean the rewards and punishments that are perceived by individuals to be related to their own actions and those of others. *Institutional incentives* are the incentives, both material and non-material, which are generated within institutions. Carefully crafted institutions can generate positive incentives that help actors solve their collective action problems (Ostrom, Gibson, Shivakumar and Andersson, forthcoming)

LOCAL VS. MUNICIPAL GOVERNMENT

In the decentralisation and natural resource management literatures, the terms *local* and *municipal* government are often used synonymously, suggesting that municipal government is the citizenry's most local governance system. In the context of Bolivia, however, it is important to emphasise the difference between local and municipal governments. This distinction becomes especially essential when discussing local collective action problems involving primarily rural citizens because municipal governments are often physically very far from many of them. In Bolivia, there are some municipal governments whose jurisdictions span over 50,000 square kilometres, which is equivalent to the land area of the entire country of Denmark. Moreover, it is not uncommon that a Bolivian municipality hosts more than a hundred rural communities. Within each of these communities there may very well be a formal institutional structure, such as village by-laws, elected community representatives and even a village council. When such local institutional arrangements exist, it would be more appropriate to refer to *them* as the local government.

Why Bolivia?

Several factors make Bolivia a most appropriate country for the study of decentralisation reforms. First, while many other countries in Latin America have introduced decentralisation reforms in the natural resource management sectors, no other country has carried this process as far as Bolivia (FAO 1999). The country's 1994 Popular Participation Law devolved a broad range of responsibilities, functions and political decisions over education, health, urban infrastructure and natural resource management. The central government also transferred approximately 20% of the national government budget to carry out the municipal government decisions. The 1996 Forestry Law gave municipal governments direct control over 25% of centrally collected royalties from commercial logging concessions within each municipal territory. The decentralised regime encouraged municipal governments to create municipal forest reserves for local community logging concession on up to 20% of all public forested lands within each municipality's territory (FAO 1999).

Second, Bolivia's rich natural resource base is undergoing rapid changes. This means that one can expect to find large variance in the patterns of land use change in the different municipal territories. The fast pace of land cover change is especially evident in the country's tropical lowlands.

Third, Bolivia has gained an international reputation as a "decentralisation success story" (UNDP 1998). Consequently, one can expect to find a good mix of cases and experiences of municipal governance of natural resources. The study is particularly interested in understanding why some municipal governments do better than others and it is therefore important that at least some success stories at the municipal level can be identified.

[221] For the purposes of this study, privatization is therefore not considered a form of decentralization

Finally, there is a growing number of national and international scholars who study the results of the decentralisation reforms in Bolivia, and an important body of empirical literature is beginning to emerge (see for example Urioste et al. 2001, Camacho et al., 2001, Contreras and Vargas 2001, Hernaiz et al. 2001, Rowland 2001, Fauget 2000, Burki et al. 1999, O'Neil 1999, Pacheco and Kaimovitz 1998, Thévoz 1999 among others). None of these studies, however, addresses systematically the effects that the decentralisation reform has had on the internal decisions of municipal governments and how these in turn influence the local patterns of natural resource use. This article takes on the challenge of beginning to formulate a series of testable hypotheses that link institutional and socio-economic variables embedded in the decentralised regime to real decision outcomes at the municipal level.

The Bolivian decentralisation reforms

Through the decentralisation reforms in the mid 1990's, municipal governments became a *tour de force* in Bolivian politics. Most of the current municipal governments did not even exist before 1994, and the ones that did, played only a symbolic role in the local political arena. In pre-reform Bolivia, municipal governments were essentially small, voluntary urban organisations without any significant political power, financial resources, or a clearly defined jurisdiction. Many of them had no formal obligations to either the central government or the citizens, apart from keeping the town square neat and tidy. That all changed with the reforms in 1994, when the central government began to transfer political decision making competence and financial resources to municipal governments.

Between 1994 and 1996, President Sanchez de Lozada's government introduced a series of decentralisation reforms that would radically change the country's political structure. The Law of Popular Participation (1994), the Law of Municipalities (1995) and the Law of Decentralised Administration (1995), define the extent and content of the municipal government mandate. In the decentralised regime, 314 municipal governments have been given the formal political competence and financial instruments to carry out a mix of centrally and locally-defined priorities and political programmes.

In 1994, just after the Law of Popular Participation was passed, many municipal government's annual operating budget increased by as much as a thousand%, and more than a few went from a zero-budget to tens and thousands of dollars in available resources, practically overnight. For instance, the 41 rural municipalities in the Department of Cochabamba increased their annual budgets by an *average* 1,310% from 1993 to 1994, and by 259% from 1994 to 1998 (Government of Bolivia 2000). In addition to the intra-governmental financial transfers, each municipality may levy taxes on motor vehicles as well as taxes on all urban property and large properties in rural areas, although the contribution of the municipality- levied taxes have been minimal for most administrations.[222]

Municipal governments may *not* levy their own taxes on operations in the forestry sector, however, and they are not allowed to ask for user fees when providing public services in the sector. The Forestry Law (1996) lays out the broad mandate of the municipal governments in the forestry sector. These are discussed in more detail in the section that follows.

Decentralisation of forestry sector governance

According to Bolivia's decentralised forestry regime, the main duties of municipal governments are related to the monitoring of formal user rules prescribed by the forestry law. In addition, the municipal staff are to lead and co-ordinate the planning, implementation and monitoring of all public services related to the forestry sector in their respective territories. As long as municipalities comply with the overall formal mandate, they are free to adopt their own strategies of how to meet the exigencies of forest users in their jurisdictions, as long as these strategies do not conflict with the formal forestry regime.

Several policy analysts have noted that forest resources are under-utilised in the fight against poverty in Bolivia (Pacheco 2001, Forestry Superintendence 1999, Andersson 2001, Contreras and Vargas 2001). Supported by empirical data from 54 municipalities in the Bolivian Lowlands, Andersson (2001) argues that one of the primary reasons for the forestry sector's limited contribution to the improvement of rural livelihoods, is the widespread insecurity of forest property rights among the rural poor. Given the small likelihood that the central government will be able to provide effective institutions that guarantee a fair and consistent rule of law and a robust property rights system any time soon, is there anything municipal governments can do to address insecure forest property rights?

[222] In rural areas, private property farms that are smaller than 50 hectares are exempt from municipal property tax.

Facilitation tasks supportive of self-governance	Official mandate
Low cost arenas for conflict resolution	Encouraged by Decreto Supremo No.23858[223], and Law of Municipalities article 144,1-2
Participatory planning	Required by the Law of Popular Participation, article 8, a, b, and the Law of Municipalities[224], article 44- 11
Assist user in bureaucratic dealings	Encouraged by the Law of Municipalities, articles 8-III-8 and 8-V-4
Monitoring rule compliance	Required by Forestry law, article 25,c-h
Supporting users' efforts to monitor their resources	Allowed as long as rules are not contradicting national law
Information about opportunities in improved legal access to forest products	Allowed as long as actions are not violating national law
Information about changing condition of forest resources in the area	Allowed as long as actions are not violating national law
Co-ordinate activities with external organisations, attract support	Required by the Law of Municipalities, articles 8-III-8 and 8-V-4
Broker contacts with external markets	Allowed as long as actions are not contradicting national law

Table 1: Supportive tasks for self-governance compared to the municipalities' official mandate

THE POSSIBILITY FOR MUNICIPAL FACILITATION OF IMPROVED FOREST PROPERTY RIGHTS

Ostrom (1990, 2000) points to several key functions for formal governmental regimes to encourage and support self-organised collective action among local resource users.Governmental authorities recognised by resource groups, such as Bolivia's municipal governments, can facilitate the creation of local collective action to ameliorate forest property rights by (1) providing accurate information about natural resource systems; (2) providing arenas in which participants can engage in discovery and conflict resolution processes, and (3) backing up local monitoring and sanctioning efforts. Table 1 illustrates how these and other supportive governmental functions relate to the formal municipal mandate in Bolivia's forestry sector.

The comparison in Table 1 reveals that the governmental functions associated with self-governance support, which collective action theory recommends for larger governmental jurisdictions, are within the legal competence of the municipal mandate in the forestry sector. *The possibility exists, then, for municipal governments to play a significant role in supporting effective, self-governed institutions for forest management among local forest users in Bolivia.* The possibility that municipal governments will actually perform these functions in the best interest of self-governance, however, is a different question and it depends on at least two subsequent questions. First, are municipal governments *motivated* to provide these services, and second, are they able to do so in an accountable, efficient and effective manner? For the remainder of this article, the focus will be on the first of these crucial questions. A quantitative empirical analysis of motivational problems in municipal forest governance will be developed in light of a theoretical discussion on the relevance of such problems.

POTENTIAL PROBLEMS FOR THE POSSIBILITY OF MUNICIPAL FOREST GOVERNANCE

There are arguably three main actors that are involved in municipal forest governance: Forest users, representatives from central and municipal governments. Effective municipal governance of forest resources requires the solution of several collective action problems that complicate any one actor's effort to improve forest tenure security. Jointly, these actors must be able to devise and enforce a set of decision-making rules that can produce an adequate municipal work programme, allocate resources efficiently, prevent shirking among employees, incorporate local knowledge of time and place in local policies, among other crucial aspects of governance. In each of these

[223] Reglamento de las Organizaciones Territoriales de Bases, Decreto Supremo No. 23858. 1994

[224] Ley de Municipalidades, Ley No. 2028, 1999

decisions, the actors face several *motivational* and *informational* problems that threaten a productive collective outcome. In fact, motivational and informational problems are common collective action problems that permeate virtually all collective action situations in every action arena, not just in municipal governance.

The collective action literature speaks to the many variables that affect the efforts of individuals to overcome collective action dilemmas. These variables can be grossly classified into motivational and informational variables (Ostrom, Gibson, Shivakumar and Andersson, forthcoming). The success of addressing collective action problems in municipal forest governance depends largely on how actors can create institutions that mitigate the effects of motivational and informational problems.

Motivational and informational problems complicate collective action because they produce a tension between the individual self-interest and the collective good that is sought through co-operation. In such situations, actors face incentives to defect from co-operation and seek short-term personal benefits. Because of the potential damage that these problems can cause in the quest for more secure forest property rights, the particular information and motivational problems that can be expected to surface in each action arena warrant deeper discussion.

MOTIVATIONAL PROBLEMS

Motivational problems are prevalent in all collective action dilemmas associated with both public goods and common pool resources. Common for both of these types of goods is the difficulty to exclude non-contributing group members from the benefits of collective action outcomes. The exclusion problems in both public goods and common pool resources are related to the difficulty in identifying who the non-contributing participants might be. When this is the case, group members may be tempted to free-ride on the efforts of others, especially if they believe that the other group members are likely to bear the costs of providing the collective good.

Some participants participate in the collective action process, because they see the interaction as a way of influencing the decision making so that the outcomes benefit them personally rather than the group at large. The latter is an example of rent-seeking behaviour. Both situations that involve collective goods and rent-seeking involve motivational problems. In both these situations participants find themselves torn between the commitment to cooperate with the common goals of the group and the temptation to put the individual self-interest first. This tension may cause some participants loosing their motivation to cooperate.

INFORMATION PROBLEMS

Informational problems are at the core of all collective action efforts, especially those that involve a large number of actors at multiple levels. The information problems stems from the fact that not all actors involved in the collective action effort have access to the same information. A participant in a group undertaking will have a hard time knowing the true contribution of other group members, unless constantly observing their actions, which can be both difficult and costly to do. Williamson notes that whenever the individual contributions are costly or hard to measure, there are incentives for group members to behave opportunistically (Williamson 1975).

Individuals involved in a collective action situation have access to different kinds of information. Hayek observes that "every individual has some advantage over all others in that he possesses unique information of which beneficial use can be made"(Hayek 1948). Individuals can use information that only they hold to their personal advantage, possibly leading the group effort to unravel. The classic example of an information problem is that of a car salesman who may know the true quality of the car he is trying to sell, but may find that it is not in his best short-term interest to reveal this information to the potential buyer (Akerlof 1970). An inexperienced buyer may not be able to determine the true quality of the car, and run the risk of being cheated. The asymmetries of information in collective action situations tempt participants to take advantage of their private information at the expense of the desired group outcome. Unless counteracting institutional arrangements have been devised by the group to deal with these information asymmetries, opportunistic behaviour may result (Ostrom, Schroeder and Wynne 1993).

Elected municipal government officials may be formally committed to both the central government and constituents to perform a series of functions in the forestry sector, yet the municipal officials may be tempted to ignore such commitments, especially if it is difficult to determine the true effort of the municipal government. When a municipal government's resources are scarce and the personal well-being of the people in power is not associated with forestry service provision, officials the temptation to defect from the commitment is likely to particularly strong. Under such circumstances, one cannot take for granted that municipal governments' will honour

their commitments to care about forestry sector activities. Rather, it is important to consider why municipal governments would be motivated to work in the forestry sector. Earlier empirical work in Guatemala's forestry sector, has identified four potential sources of institutional incentives that could motivate municipal governments to actually provide public services in the forestry sector (Gibson and Lehoucq 2000). The potency of these incentives are examined empirically in Bolivia's forestry sector.

The approach of the empirical inquiry

This research seeks to understand the mixed results of municipal forest governance. Why have some municipal governments failed to even begin to address governance issues in the forestry sector while others have not only provided a score of public services in the forestry sector, but some of these seem to have generated quite positive results? Considering the rather adverse institutional conditions for local government in Bolivia, failures in municipal forest governance come as little surprise.[225] The many motivational and informational problems help to understand what might block the municipal actors from producing the desired outcomes in the forestry sector.

It is more puzzling why some municipal governments have challenged the adverse conditions and appear to have overcome some of the observed collective action problems. Our current theoretical understanding of the underlying conditions of collective action would suggest that the prospects for effective municipal forest governance in today=s Bolivia are rather slim. Thus, to the extent that successful experiences exist, they need to be explained.

In order to find out what seems to be driving these preliminary observations of success, a core hypothesis with a set of dependent sub-hypotheses has been developed. The core and sub-hypotheses of the study defines the range of variables of interest and at what levels these variables need to be measured.

THE HYPOTHESIS

There is increasing concern among some policy analysts that decentralisation reform has become a policy panacea, a widespread belief that decentralisation is the solution to all governance problems associated with natural resource management (Ostrom 2000, Agrawal and Ostrom 1999). In view of the recent proliferation of decentralisation policies in non-industrial countries, it is therefore important to distinguish between naïve and nuanced hypotheses about the effects of decentralisation reforms. A naïve hypothesis would simply state that "decentralisation reforms make municipal governments effective facilitators of local collective action in the forestry sector." Such a hypothesis regards the decentralisation process as an automatic process and fails to recognise the inherent collective action problems that are likely to prevent effective institutions from emerging. A more balanced and nuanced hypothesis would reflect the importance of solving several collective action dilemmas that are embedded into the various levels and stages of the decentralisation process.

The core hypothesis of this study is that *decentralisation reform characteristics can motivate municipal governments to become effective facilitators of local collective action problems in the forestry sector, but their success as facilitators depends on their ability to address motivational and information problems in their internal organisation as well as in the interactions with forest users*.

The causation in this hypothesis is rather complex and cannot be tested empirically with a single test, even with vast amounts of empirical data about municipal governments. The complexity has to do with the fact that the hypothesis encapsulates several different causal relationships between actors at different levels of society.

There are at least three different sets of actors implicitly included in the hypothesis. First, there is the central government that is behind the decentralisation reform. Second, there are the municipal governments that are somehow influenced by these reforms. Third, there are the forest users whose collective problem solving efforts might be somehow affected by the services provided by their municipal government. The effect of these collective choice-level efforts to solve operational-level problems related to insecure forest property rights may ultimately be visible in the changing condition of the forest resources in the immediate user environment. The multilevel, causal chain can be viewed in Figure 2.

[225] Such as weak rule of law, inequitable distribution of wealth, high illiteracy rates, weak tradition of civil society participation in governance of natural resources, traditional centralized government administration and dominance of local elites in local politics

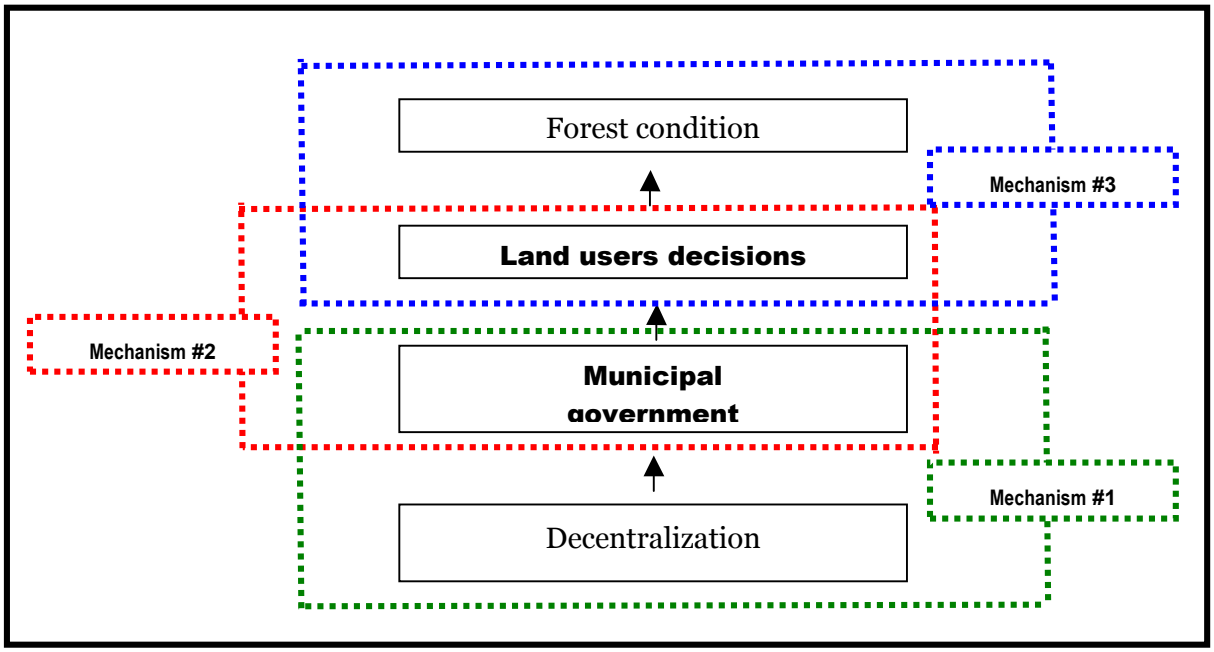

Figure 2. Casual mechanisms of the research design

Breaking down the core hypothesis into three distinct casual mechanisms will facilitate the empirical testing of the core hypothesis. Hence, a sub-hypothesis can be developed for each of the causal relationships shown in Figure 2. This article focuses on the first casual mechanism—how four different characteristics of the decentralised regime affect municipal government decisions. The following sub-hypothesis has been developed to test that mechanism empirically:

Sub- Hypothesis: The provisions of the decentralisation reforms can generate positive institutional incentives that motivate municipal governments to address forestry sector issues.

If the sub-hypothesis is false, we can expect municipal governments to perform poorly in collective action facilitation of local problems in the forestry sector, which would lead us to falsify the core hypothesis. If the sub-hypothesis is true, municipal governments may be motivated to solve collective action problems, but it does not necessarily mean that they will be successful in doing so. Successful facilitation of collective action will require municipal governments to address another set of problems related to collective action within the municipal government as well as in interactions with forest users.[226]

THE INDEPENDENT VARIABLES

This study argues that municipal governments are more motivated to provide public services in the forestry sector when *a combination* of the following institutional incentives exists:

- Central government forces them to provide these services;
- Potential financial gain from services motivate municipalities to provide them;
- Important interest groups demand services, or
- Important constituents demand services in the forestry sector.

The combined strength of these institutional incentives will be estimated using variables on municipal government perceptions about how the centrally designed decentralisation reforms have affected the relationship between municipal administrations and forest user groups, non-governmental organisations, as well as private sector actors operating within the forestry sector. To capture these perceptions, personal interviews were carried out with three different actors involved in the municipal governance of forests resources in 54 randomly selected municipalities in the Lowlands of Bolivia: (1) The Mayor; (2) The municipal forestry officer, and (3) The president of the municipal association of community level organisations.[227]

The strength of the first incentive, generated by central government coercion, will be measured by the Mayors' perceptions with regards to the frequency and intensity of central agency enforcement of the municipal mandate in forestry, and whether the level

[226] Many of these problems are related to information problems. To test the municipalities ability to deal with these internal information problems will be the topic of future inquiries and will not be pursued in this paper.

[227] El Comité de Vigilancia, the Vigilance Committee, is empowered by the 1994 Popular Participation Law to monitor the performance of the municipal government.

of perceived control is associated with the provision of forestry sector activities by the municipality.

The second source of incentives—that of municipalities being potentially motivated to invest in forestry sector activities by potential financial gains—will be measured by the degree to which municipalities are financially dependent on forestry activities. Secondary data from the Bolivian Forestry Superintendence (2000) will be used to test the possible relationship between financial dependency and the provision of municipal services in the forestry sector.

The third incentive will be measured in two ways. First, it considers the number of non-governmental organisations that are active in the forestry sector in each municipality, and second it considers the frequency with which these organisations interact with municipal administrations. The combined measure would give us an idea of the influence that forestry sector interest groups have on municipal provision of forestry sector services.

Finally, the incentives derived from possible demands from municipal constituents are measured by the frequency of demands by community-based organisations on municipal government to intervene in the forestry sector.

THE DEPENDENT VARIABLE

A dichotomous variable, indicating whether the sampled municipal governments included forest activities in their 1999 municipal work plans, is employed as a dependent variable in the empirical tests.

Quantitative empirical methods

The strength of the incentives and their relative influence on the provision of public services in the forestry sector will be analysed using quantitative methods. The advantage of such an analysis, as compared to a purely qualitative analysis, is that it is possible to specify the level of uncertainty of the findings as well as the magnitude of the independent variables' influence.

The quantitative analysis will be carried out in two steps. First, the current state of institutional incentives for forestry sector service provision will be assessed for the selected Lowland municipalities. This is will be done with descriptive statistics, for example indicating what proportion of municipalities that face strong constituent pressures to provide municipal services related to the forestry sector. Part of this analysis will satisfy the article's first objective of assessing to what extent successful municipal forest governance is likely in Bolivia.

The second step of the empirical analysis compares the association between four different sources of institutional incentives and the likelihood of municipal provision of forestry services. To do so, the 5-point ordinal scores are converted to a dichotomous variable for each source of incentive. For example the frequency of central government monitoring is converted to be characterised as being simply high or low. This variable's degree of dependence on the provision of forestry services is then estimated through a cross tab analysis. Pearson chi-square and Kendall tau-b tests are used to estimate the degree of association between each incentive on the likelihood of the municipalities providing forestry services. This step of the analysis will satisfy the study's second objective of the assessing what factors seem most influential on the municipal government's decision to provide forest services.

After studying the importance of each of the four incentive sources, a *combined* index of all four sources is developed to estimate the likelihood of municipal governments providing forestry sector services. The theoretical prediction is that the more incentives a municipal government faces, the more likely the provision of forestry sector services. In a sense, this analysis provides a statistical test of this article's assumption that the four specified sources of incentives are important drivers of municipal decision-making.

Empirical findings

IS THE SAMPLE REPRESENTATIVE?

Before carrying out the empirical tests of the sub-hypothesis, a difference in means test was carried out to assess whether the random sample is representative of the larger population of municipal governments in the Bolivian Lowlands. The results, presented in Table 2, shows that there are no statistically significant differences between the random sample and the larger population of municipal governments, when comparing several socio-economic and bio-physical characteristics of the different municipalities. We can conclude that the random sample seems representative of the larger population of municipalities in the Lowlands. Thus, it would be possible to make inferences about the general situation of municipal governance in the forestry sector in the Lowlands, based on the findings in the sample.

	Population density	Annual budget	Human development index*	Health sector infrastructure
Population (n=102)				
mean:	10.13	2.59	0.48	8.31
St Dev:	28.03	2.66	0.07	13.29
Sample (n=54)				
mean:	11.4	2.91	0.48	9.9
St Dev	16.32	2.9	0.07	10.77
95% C.I:	no diff	no diff	no diff	no diff
* UNDP 1998				
Source: Ministry of Sustainable Development REDFAINDER data base (1999)				

Table 2: Difference of means-test for Lowland Municipalities in Bolivia

Are municipalities motivated to provide forestry-related services?

CENTRAL GOVERNMENT COERCION

The estimation of the strength of the first source of institutional incentives, derived from the degree of central government control and enforcement of municipal government obligations in the forestry sector, shows that (1) although all municipal administrations are obliged by the centre to provide public services in the forestry sector, the perceived level of enforcement varies greatly between one mayor and another; (2) the centre's enforcement is generally slack, evidenced by the fact that 78% of the mayors was of the opinion that monitoring visits by the central government occurred "rarely", "very rarely" or "never". The average score for all respondents was 3.51, which would indicate that central government monitoring, as a rule, occurs at a frequency between the categories of "rarely" and "very rarely" in the ordinal scale.

Variable	Survey Questions	Activities	Mean	Median	Mode
1	Frequency of interaction between central and municipal government N=52	general contacts	3.41	3	3
		training	3.45	3	2
		technical assistance	3.59	4	4
		central monitoring	3.51	3	3
		transferred resources	3.33	3	2
2-a	Financial dependency, ordinal N=53	Forestry Sector	3.42	4	5
2-b	Financial dependency, percentage N=53	Forestry Sector	8.90%	1.04%	-
3-a	Number of NGOs N=50	NGOs	1.42	1	1
3-b	Frequency of NGOs interactions with municipal governments about forestry issues (N=39)	General meetings	2.33	2	2
		Formal meetings	3.36	3	3
		Council meetings	3.41	4	4
4	Frequency of constituents demands on municipal government according to sector (N=52)	Education	2.15	2	2
		Health	2.23	2	2
		Drinking water	2.33	2	2
		Roads	2.52	3	3
		Electrification	3.17	3	3
		Agricultural extension	3.25	3	3
		Forestry sector	3.79	4	4
		Sewer pipes	3.92	4	4
		Garbage collection	4.37	5	5
		Public safety	4.62	5	5
5	Grass root rank of priority activities for municipal governance(N=50)	Education	1.39	1	1
		Health	1.43	1	1
		Drinking water	1.61	1	1
		Roads	1.73	2	1
		Agricultural extension	2.41	2	2

		Electrification	2.47	2	2
		Sewer pipes	3.12	3	3
		Forestry sector	3.69	4	3
		Garbage collection	3.84	4	5
		Public safety	4.59	5	5
		Education	1.39	1	1
		Health	1.49	1	1
		Drinking water	1.69	1	1
		Roads	2.14	2	2
6	Mayor's rank of municipal government's priority activities (N=51)	Agricultural extension	2.63	2	2
		Electrification	2.88	3	5
		Sewage pipes	3.06	1	1
		Forestry Sector	3.37	3	3
		Garbage collection	3.8	4	3

Table 3: Survey results from Lowland Municipalities (CIPEC 2001)

Survey responses were made according to the following 5-point ordinal scale:

1 = Most Important / Most frequently

2 = Quite important / Quite frequently

3 = Not so important / Rarely

4 = Unimportant / Very rarely

5 = Least important / Never

The effect that central government monitoring has on the likelihood of providing municipal services in the forestry sector is tested using a Pearson chi-square and Kendall Tau-b test statistic. The results, presented in Table 5, shows that municipalities that are more closely monitored by the centre also tend to provide forestry sector services, while a large proportion of those that are sparsely monitored do not provide any. This is not to suggest that the provision of services is caused by the frequency of central government monitoring. Rather, the chi-square and tau-b scores means that monitoring seems *associated* with the municipal provision of forestry-related services, and the robust results would suggest that the association is quite strong.

POTENTIAL FINANCIAL GAINS

The potential financial payoffs from municipal involvement in the sector would motivate municipalities to provide forestry sector services if such payoffs were perceived as substantial. Currently, the municipalities' only source of income in the forestry sector is the central government, which is distributing a share of the collected revenues from concession fees, land clearing permits and other sources, to municipal governments and other organisations in the sector. As noted earlier, municipal governments have no mandate to collect their own taxes on forestry activities, and they are not empowered to keep the fines that violators of the forestry law have to pay (even if these are caught by the municipal staff).

In theory, the formal rules of the regime are such that they make the financial incentive rather weak for the municipal governments. The income the municipality receives from central government does not depend on its performance in the forestry sector. While official rules do exist and these require that municipal governments that receive forestry-related resources from the centre, are required to carry out such activities. The spotty enforcement of these rules by the centre weakens this incentive considerably. The fact that not a single documented sanction has been imposed on a non-complying municipality, weakens the incentive for the municipality to comply with the formal rules altogether (SIF 2001, personal interview). This precedent of weak enforcement sends the message to the municipal governments that the financial benefits will be theirs even if they do not comply with their forestry sector obligations.

The secondary data on centrally distributed forestry-revenues shows that the average financial dependency on forestry incomes seems quite high, but a closer look at the considerably lower median would indicate that the distribution is severely skewed. In fact, a recent analysis of the central government's distribution of forestry-related fiscal incomes showed that a group of 13 municipalities (or about 10% of all forest income-receiving municipalities) get about 80% of all centrally-distributed resources (Pacheco 2000). The survey data presented in Table 3 (variable 2a, 2b), implies that most municipalities in the lowlands do not have a high financial dependency on forestry resources. The most common response to the question how important forestry-related incomes were to the municipality was "least important" and in 63% of all municipalities forest-related revenue represents less than 5% of the fiscal transfers they receive from

central government.

Incentive	Incentive source	Cross tabs				Pearson Chi-Square	Kendall's tau-b	df
1	Central government monitoring	Provision/ Monitor	none	some	total	12.2386***	0.4851**	1
		low	15	7	22			
		high	6	24	30			
		total	21	31	52			
2	Financial dependence	Provision/ Financial	none	some	total	15.3400***	0.5430**	1
		low	20	13	33			
		high	1	18	19			
		total	21	31	52			
3	Interest group influence	Provision/ NGO-influence	none	some	total	12.4630***	.4900***	1
		low	19	13	32			
		high	2	18	20			
		total	21	31	52			
4	Constituent demands	Provision/ Constituents	none	some	total	9.055***	0.4170**	1
		Low	15	9	24			
		High	6	22	28			
		Total	21	31	52			
Combined	All four sources combined	Provision/ Combined	none	some	total	77.0330***	0.7160**	1
		low	19	7	26			
		high	2	24	26			
		total	21	31	52			

Table 4: Association between decentralisation-derived incentives and municipal provision of forestry sector services (N=52 valid cases)

One way to find out whether the financial incentives are at all important for municipal decisions with regards to forestry is to compare whether municipal governments with high financial dependency tend to provide more forestry sector services than municipalities with low financial dependency. Results from the cross tab analysis in Table 4, suggest that municipalities highly dependent on forest incomes for their overall operating budget (> 5% of annual revenue), seem to also provide some forestry sector services. Again, this does not mean that the financial dependence is driving the provision of municipal services in the forestry sector. The Kendall tau-b score, significant at the 0.001 level, indicates nevertheless that the relationship between financial dependency and forestry service is positive and quite strong.

INTEREST GROUP PRESSURE

Non-governmental organisations are playing an important role in supporting natural resource management initiatives in many rural communities in Bolivia (Birk 1999, Muñoz 2000). As promoters of greater attention to the needs of the rural poor, NGOs may exert pressure on municipal governments to respond to the needs of rural communities by providing services to them. If the NGO is considered important by the municipal authorities, such pressure would provide an incentive to the municipal authorities to provide forestry sector services.

As shown in Table 3 (variables 3a, 3b), the majority of lowland municipalities (78%) has one or more NGOs working in the forestry sector within their jurisdictions. The overall influence that these NGOs have on the provision of forestry sector services in the Lowlands as a whole is likely to be moderate, at best. The numbers in Table 3 suggests that the NGOs generally do not interact frequently with municipal authorities. However, it should be noted that in the municipalities where NGOs *do* interact more frequently with municipal government, there are generally also some forestry services provided. There seems to be a strong and positive association between NGO interactions with municipal governments and

the provision of municipal forestry services.

PRESSURE FROM CONSTITUENTS

The strength of the incentive originating from constituent pressure will partly depend on the availability of accountability mechanisms through which constituents can make their voices heard before the municipal government. If such mechanisms exist, the preferences for municipal intervention, as expressed by grass root organisations, should not differ much from the priority areas as defined by the municipal governments. Table 3 (Variable 4) presents the mayor's perceptions of the frequency of grass root organisation demands on a series of issues. According to the mayor, constituents demand municipal intervention in the forestry sector "very rarely" or "never" in 65% of the municipalities. The mayors' assessment of constituents' demands seems congruent with the grass root organisations' prioritisation of municipal interventions, (variable 5) in Table 3. The mayor's definition of municipal priority activities (variable 6) is no different from constituency's priorities. In fact, a comparison of survey results on variables 5 and 6 shows that the grassroot organisations assign even lower priority to forestry services than do the mayors. As one would expect, in most municipalities where constituents engage in more or less frequent interactions with the mayor about forestry issues, municipal forestry services are provided as a rule.

The quantitative analysis of constituent pressure on municipality decision making would suggest that (1) the generally low priority given to forestry sector activities does not seem to be a problem of accountability; (2) forestry activities are not a primary priority for neither municipal governments nor the majority of people at the grass root level; (3) the general lack of constituent pressure on municipal government to provide forestry services generates weak incentives for municipal government performance in the sector; (4) municipalities that have community representatives that are more actively pushing for forestry issues in dialogue with municipal authorities, generally also provide some services in the sector.

Does a combination of the four incentives affect the provision of municipal forestry services?

This study has assumed that municipal governments are not likely to be motivated to provide forestry sector services unless the decentralised regime provides institutional incentives to do so. Four sources of incentives have been examined *individually* so far, and now the study turns to consider the *combined* effect of these incentives. If municipalities are truly motivated by these incentives, one would expect that municipalities facing a combination of such positive incentives would exhibit a high ratio of forestry sector service provision. Also, if all four of the specified incentives are indeed important, the measure of association with municipal forestry services should be even stronger than for the four incentives individually.

Comparing the Pearson chi-square "goodness of fit" score for the four individual incentives with the combined incentive score, points to the utility of considering all four incentive sources when trying to predict whether a municipality will provide public services in the forestry sector or not. The results, presented at the bottom of Table 4, reveal that the association of the combined incentives index and the municipal service provision in the forest sector is several magnitudes stronger than for any of the incentives individually. It appears that the combined strength of the four institutional incentives is an important factor to consider when studying municipal decision making.

While the findings confirm that all four incentives appear to be fundamental factors in successful municipal forest governance, they also warrant a great deal of realism with regards to the expectations on decentralisation reform in Bolivia's forestry sector. The results would suggest that it cannot be assumed that municipal governments will automatically begin to address pressing environmental issues just because they now have the legal mandate to do so. At a minimum, municipal governments need to face sufficiently strong institutional incentives in order to be motivated to take on such issues. This article has shown that if a municipality faces one or more of the four institutional incentives considered here, it may become motivated to take action.

Conclusion

This article has showed that the presence of particularly four sources of institutional incentives appears to explain why municipalities in the Bolivian Lowlands would decide to provide municipal services in the forestry sector. Unfortunately, these four incentives are largely absent from scores of municipalities in the forest-rich Lowlands of Bolivia. Even if these critical incentives increase in the future, there is no guarantee that this will lead to effective municipal forest governance. Decentralisation may motivate some municipal governments to get involved in the forestry sector, but it does not automatically lead to improved governance performance. Once motivated, municipal governments face the challenge of trying to provide and arrange for the production of the most adequate type of municipal service, efficiently, and at the right time. Thus, the empirical findings reject the

naïve hypothesis that decentralisation automatically would produce effective municipal governance.

Several collective action dilemmas will have to be overcome, both internally within the municipal administration as well as in the interactions with forest users, in order to achieve successful governance. The theoretical analysis in this article points to information problems as one potential source of difficulty for municipalities. Policy analysis of decentralisation would benefit from future empirical research investigating the effect of that the combination of motivational and informational problems have on governance performance.

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Non-Governmental Organisations and Forest Resource Management in Cameroon

by Pamela A. Agbor and Walters A. Arrey***

The Earth summit in Rio de Janeiro (Brazil) in 1992 fanned across the globe, awareness on control and usage of natural resources in view to mitigate adverse environmental changes. Cameroon was carried along by this wind in its quest to conserve and protect one of her jealous resources—the forest. The forest of Cameroon became a targeted resource for control because of downward trend in acreage and value vis-à-vis its significant contribution of 8% to Gross Domestic Product (GDP) With 20 million hectares of humid and dense forests, Cameroon has the second largest forest reserve in Africa in terms of surface area after Zaire as well as the second biodiversity reserve after Madagascar.

Cameroon has always opted for a careful management of its forest resource based on: a perfect knowledge of its forest heritage; the taking into account of inter sector collaboration in the planning of the use of forest resources; a balanced management of resources by placing certain zones on reserve and by exploiting the other parts on a sustained and lasting base; the development of forest through regeneration activities.

However, the efforts contributed by the government using a top-down approach, have not yielded satisfactory result. Cameroon's forest has been decreasing at an alarming rate. It was not until the 90s that the devolution of forest management strategies to the local population and other partners was seen as an indispensable tool for sustained and lasting management of our forest. The intervention of NGOs in the scene of forest management became necessary and complementary to the government. The article discusses the situation of forest resource management and analyses the role of NGOs in solving environmental problems associated with forest resource mismanagement in Cameroon.

INSTITUTIONAL REFORMS AND NGOS

Over the years, the government has watched the forest reserves dwindling in acreage and value steadily and at a significant rate. Its attempt to halt the causes through updating forest legislation and drafting a forest action plan still saw the forest being degraded with high impunity. The need to draw up a new forestry policy which better integrates innovative strategies for the national utilisation of rural land to reflect the new national economic context as well as recognise the world wide concern for sustainable management of the environment then came up very strongly.

The government enacted law No. 90/053 of December 19, 1990 called Freedom of association law, which permitted Non-Governmental Organisations with interest in the environment to be set up. In its 6th legislative and 2nd ordinary session for 1999-2000 legislative year, the national assembly further deliberated and adopted a legal framework to govern NGOs. Today more than 10 NGOs exist per province. Examples in this study will be based on the Living Earth Foundation, Yaounde, the German Agency for Technical Co-operation (Mount Cameroon Project, Buea) and the World Wide Fund for Nature (Korup Project, Mudemba) at the international level, and the Centre for Environment and Rural Transformation (CERUT, Limbe), the Rural Training Centre (RTC, Kumba) and Livelihood (Bamenda) at the local level.

Factors that have encouraged forest degradation

Political. As the political system of Cameroon changed hands, the forest management style changed, too. At independence 1960, the government just picked up management options handed down by the colonial masters France and Britain. After reunification of the British Kamerun and the French Cameroun, there has been disparity between the French brought up and the English brought up in their approach to forest resource management. Apparently, the French forest management policies were milder, thus weakening forest administration. Some Cameroonians took advantage of the loopholes in the administration and started to exploit the forest unsustainably.

Economic. Massive deforestation and illegal exploitation were aggravated with the economic crisis which started in the 1980s. This crisis ushered in retrenchment, salary cuts and unemployment. The option of most persons was to go back and cut down the forest for farming. During this period forest reserves were abandoned, to only few visitations by forest guards.

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Under this economic conditions exploitation was carried out with relatively low replacement through regeneration and forest reserves boundaries are not maintained.

Social. Many forest reserves were gazetted without consideration for future development. Most of them lie next to residential areas e.g. Southern Bakundu, Ejagham and Ntali forest reserves. Presently, there is need for infrastructural development and farmlands for the population which has doubled since then. In the South West Province (SWP), the forest is being cut down for farmland, schools, roads, electrification, hospital and other social facilities which are priority needs of the population. Some villages (Bopo and Ntali) in the heart of the forest suffer frequent crop destruction by wild animals and threats of life by wild animals and dangerous insects. The population embarks on bushing back the forest in order to have some peace. In this manner the forest continues to diminish and loses its values.

Causes of forest degradation

Shifting cultivation. This traditional method handed down from generation to generation involves slashing and burning of chunks of vegetation for farming. The population finds it cheap and quick to prepare farmland. It is anti-forest development but indispensable for a majority of Cameroonians who are small farmers. Currently 8.5% of a farming community engages in shifting cultivation which reduces the forest value.

Plantation agriculture. In Cameroon, there are a handful of plantations for mostly perennial economic crops owned by companies and small holders. The Cameroon Development Corporation (CDC)–an agricultural enterprise and the second largest employer in Cameroon–was allocated 100,000ha of prime forest in 1947. By the year 2000, 45,000ha had been converted to plantations of rubber, oil palm, tea and banana. 55,000ha are no longer prime forest because CDC encourages food crop or chop farms to her field workers (about 20,000 persons with an average household of 10 persons). This chop farming has destroyed some of the best and high biodiversity areas in the region. Even though plantation agriculture practices have devastated many natural ecosystems replacing them with monoculture designed for maximum short-term production, it is still promoted because of its economic advantages.

Illegal lumbering. Through unauthorised lumbering exploitation norms are shunted. The forest is degraded with high level negative environmental impact. In the Mungo forest reserve, for instance, illegal exploiters unselectively felled about 150 logs of mother trees, leaving about 30ha to 40ha of forest floor at the mercy of erosion. No regeneration activity was planned for the area. The same holds true for many other forest reserves within the country.

Wild bush fire. Poor smoking habits, traditional honey harvesting, road accidents and uncontrolled burning are major sources of wild bush fire. In SWP of Cameroon, plantation, crop farms, forest reserves are preys to wild bush fire yearly. There are at least 5 to 10 affected farmers per village and occurrences of 2 to 3 outbreaks of fires in forest reserves and plantations. In most cases, if the fire is not controlled, about 3 to 4 ha of vegetable matter is consumed per fire incident. Fire outbreak usually peak in the period from December to March.

Civil engineering works and urbanisation. In attempt to push development into hinterland through road development, creation of administrative head quarters, rural electrification and other social infrastructure. The forest is destroyed without any apologies, for the reason that these social structures are priority needs.

Impact of forest degradation

Loss of forest biodiversity. Loss of forest cover also implies loss of biodiversity. The imbalances in the ecosystem created by the disappearance of forest cover hardly return to equilibrium. Instead, new colonies may be formed while the original colonies disappear. Hence the cry from the population and even displacement of the population due to the disappearance of plant and animal species essential for their well-being. Cameroon has already experienced a high loss of biodiversity.

Microclimatic change. Significant changes in temperature, rainfall pattern, sunlight intensity and humidity have been noted in areas of mass deforestation. The Kumba area in SWP surrounded by three forest reserves–the Southern Bakundu, the Barombi Mbo and the Mungo–is a typical example. Through illegal exploitation and farm encroachment of these forest reserves to the tune of 40%, marked increase of temperatures by 2°C is in effect. Relative humidity has increased, and rainfall patterns have become unpredictable. Usually, rains are expected from March to October yearly. Nowadays, rainfall is late and extends up to November. As farmers are unable to plan their farm calendar well, they suffer significant losses in crop production.

Siltation and drying up of water points. The removal of forest cover has exposed water points to high sunlight rays and intense heat. Seasonal streams dry off entirely. In the Southern Bakundu forest reserve, some streamlines that were used as boundary demar-

cation features in 1986 have disappeared by the year 2000 due to deforestation. With the removal of vegetation cover, landslides, sheet and rill erosion have been promoted. The debris collected is being washed into the riverbeds resulting to heavy siltation that has reduced water volume and caused overflow. The river Barak in Mamfe-SWP suffers this fate. Downstream has been cut off into pools, while 70% of the riverbed has been silted up within the last five-year period.

Roles and activities of NGOs in forest resource management

Roles. Environmental NGOs mainly play four roles in counteracting mismanagement of the forest as well as preserving and conserving the forest ecosystem. NGOs link up project activities to the needs and environment of the local population, e.g. buffer zone development to conserve and reduce pressure on usage of forest resources; promotion of community forestry to boost participation of population in forest resource management. NGOs develop innovative approaches to solving problems and meeting the needs of local populations, e.g. agroforestry to encourage domestication of indigenous species of high need and take care of soil problems; use of locally available and cheap materials to substitute expensive technology such as e.g. the use of other plants as insecticides and replacement of fertiliser mixture of plant residues. NGOs mediate in conflicts between government agencies and the local population, e.g. on percentage royalties from forest exploitation to be given to the population or on compensation and or resettlement schemes for displaced persons in national park. NGOs contribute to social development where government falls short, e.g. by organising local workshops in areas of need, by acting as resource persons, or by facilitating development projects.

Activities. The activities of NGOs aimed at halting forest degradation and restoring the forest status can be regrouped under the following programmes: *Regeneration programme*: Forest areas that have been degraded are regenerated artificially or naturally. CERUT, KORUP Project and Livelihoods have established reforestation programmes. These programmes boost regrowth of plant species, particularly those with high economic value.

Community forest programmes that involve the assignment of community forest such that involvement and participation of the local population in management of the forest resource are increased. On the other hand, village communities secure substantial benefits for their development and are motivated to protect forest cover. This programme which took off in 1996 has already led to the creation of six community forests, most of which are found in the eastern province of Cameroon. In the SWP more than four communities are being assisted by CERUT, Living Earth Foundation and Mount Cameroon Project to meet up conditions for acquiring community forest. The creation of community forests contributes to ensuring preservation and conservation of the forest resources.

Awareness and education of stakeholders programme: It is well understood that stakeholders are knowledgeable about forest resources. However, sensitising them to be aware of its usefulness to the society is necessary. In order to educate the rural masses on innovative approaches to problem solving and to meet their needs, the Living Earth Foundation has established primary and secondary school curricula and study aids. Radio programmes and newspaper articles are also very common; so are environmental clubs in schools. Further means of sensitisation and education methods employed include park exhibitions, pamphlets, and leaflets tracks.

Agroforestry programme: Feasible agroforestry techniques are introduced and encouraged for adoption. This activity is seen to reduce pressure on the limited forest resources, maintain soil fertility status, and to serve as alternative income generating activity. Livelihood, RTC and CERUT are involved through planting of non-timber forest products, medicinal plant seedlings, domesticated fruit seedlings, urban forestry seedlings, and timber species.

Involvement of local communities: The participatory management doctrine is being applied to dissuade the idea of forestry activities as exclusively state-driven and to make forest resource management part of the community. There has been a significant level of participation from the population.

Influencing favourable policies through local politicians: Through meetings and discussions, the local politicians become more acquainted with the local realities. NGOs serve as a source of opinion. Local politicians are made members of the steering or management committee of the NGO, and NGO officials become members or resource persons with government development bodies at the provincial and national level. CERUT is a resource organisation at the national level on co-operatives and common initiative groups. CERUT is also a committee member at the national and provincial level on women, environment and development. By mingling with policy makers, NGOs are able to influence decisions on forest development.

Development of rural areas: NGOs generate employment, train local populations and strengthen their capacities. Social and economic interest groups are encouraged

and promoted in their own activities. RTC and Mount Cameroon Project encourage alternative income generating activities in production, processing and marketing of forest products. Within the scope of the Korup Project, roads and bridges are being constructed. CERUT carries out road maintenance and credit schemes. The rural world is exposed and linked up to the rest by NGO activities, and social benefits are accredited to the population.

Strength	Weaknesses	Threats
With NGOs the rural poor are adequately reached	NGOs suffer from limited ability to scale up successful project.	Politicians see NGOs as an end to extort means for their activities thus interfere with running of NGOs
NGOs effectively facilitate local resource mobilisation	NGOs lack technical capacity for complex projects	Bigger NGOs see smaller ones as potential competitor thus down play on the latter activities
NGOs promote rural participation in forest activities	There is over weighted reliance on external financial donors who tend to determine the paste of activities	
Services geared at sustainable management of forest resources are delivered at relatively low cost	Area of coverage is wide comparative to technical and managerial capacity	
NGOs can find and give innovative solution to problems		
The life span of NGOs give guarantee for project security		

Table 1: The roles of NGOs in forest resource management

Conclusion

The integrity of Cameroon forest is under threat and negative environmental consequences are already evident. Only effective management strategies can restore some of its glories. The government of Cameroon is intervening through policy formulation to rescue the forest resources. The introduction of NGOs in forest management has been a very useful instrument in halting the degradation of forest ecosystems. Truly, man's quest to meet up with its developmental needs has introduced unwanted environmental changes, notably climatic changes. The role of NGOs in mitigating adverse environmental changes through sustainable forest resource management is seen to be complementary to Government and more resourceful and cost effective at the micro level. The entry of NGOs in the forestry sector is a recent phenomenon, and with the growing awareness of the importance of the forestry sector more NGOs are sprouting. At this prime stage, most NGOs, especially the local ones, have to be encouraged. Most of their activities are relatively slow with relatively low output due to over dependency on philanthropic gestures.

On the other hand, due to the underdevelopment of the rural areas, the overall trend of forest area will be on the decrease until balance development is achieved. For the population presently has higher utility for infrastructure development and agricultural employment than for forestry. However, being aware of this shortcoming, it is sure that on promoting the roles of NGOs, a very reasonable proportion of Cameroon's forest can be managed in a sustainable way in order to deter unwanted environmental changes. Thus we conclude, first, that NGOs should not work in isolation. Networking is necessary to link up with competent institutions who can assist NGOs in developing managerial and organisational capacities. Second, for better output NGOs should trim down activities and coverage area to meet organisational capacities. Third, diversification in financial sources is recommended. Investment venturing is a possible option to reduce dependency. Fourth, NGOs should use local politicians to lobby for policies in favour of local population in forest management.

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Transnational Policy Networks and the Role of Advocacy Scientists: From Ozone Layer Protection to Climate Change

by Reiner Grundmann[*]

International regulations for the protection of the ozone layer seem to be effective. The Montreal Protocol (MP) is a much celebrated success story in international environmental policy making, and rightly so. The Montreal Protocol served as a role model and trigger for the climate change dispute. Regarding the environmental threat posed by climate change and ozone depletion and their public perception, it has been observed that 'the ozone hole has arrived as a concept in the US public's consciousness, but the greenhouse effect is entering primarily as a subset of the ozone hole phenomenon, the closest model available.' (Kempton et al. 1995). But so far, climate change negotiations have not quite moved onto a similar path of successful environmental governance. To be sure, the failure of reaching an agreement in The Hague in November 2000 was followed by a compromise in Bonn in July 2001 and further progress in Marrakech. However, the fact that the United States has withdrawn from the Kyoto Protocol highlights the serious obstacles that climate change policy faces. Comparing the landmark agreement of the Montreal Protocol with the Kyoto Process, the latter pales in effectiveness.[228] What are the reasons? There is a preliminary and obvious answer. As one commentator put it, 'perhaps one reason why expectations were so high [in the climate change case] is the success of negotiating the Montreal Protocol… Environmental NGOs and negotiators moved from ozone to climate change, many of them expecting the second shot to be much like the first one.' (Ted Hanisch quoted in Rowlands 1995: 259). But is that all one can say?

From Kyoto to The Hague: Deadlock

After the 1992 Framework Convention on Climate Change (FCCC) was passed in Rio, it took several years before the international community agreed in 1997 to a protocol of binding measures in Kyoto. In the protocol, the industrialised nations pledged that they would by 2008-2012 reduce their emissions of greenhouse gases by 5% based on 1990 levels. The countries with the highest emissions committed themselves to a reduction of 6-8%. This was a starting point which, however, does not yet come close to the range of reductions which would have to be put in place if climate change were to be prevented. According to scientists working with the IPCC, carbon dioxide emissions would have to be cut by more than 60% in order to stabilise climate on present-day levels (Houghton et al. 1990; Wuebbles and Rosenberg 1998).

In the run-up to the Kyoto Protocol the participants found themselves in a deadlock: on the one side were countries willing to take action, on the other were countries against. Among the first group was the EU, among the second countries like the US, Canada, Australia, and Japan (later known as the 'umbrella group') but also developing countries. The opponents of strict regulations used scientific uncertainty as an argument to legitimise their reluctance.[229] In Kyoto, a compromise was reached which mandated targets and timetables, leaving the implementation (including "flexible mechanisms") to further talks. In the run-up to the talks in The Hague, the EU and the umbrella group found themselves in a different kind of deadlock (with the developing world standing aside, for the time being): both disagreed about the extent to which flexible mechanisms should be allowed to reduce emissions. At The Hague, EU countries and the United States did not seem to disagree heavily over the reality of human-made climate change and the need of mitigation, but over the best way to achieve this goal, or--to stick with the official language--to maintain the 'integrity of the Kyoto protocol'.[230] The EU accused the umbrella group, especially the United States and Canada, of trying to exploit loopholes. The positions were not based on different scientific models or different orientations in principle:

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[228] For the notion of regime effectiveness, see Miles et al. (2001).

[229] In the US, groups such as the Global Climate Coalition, Citizens for a Sound Economy, Western Fuels Association or the American Petroleum Institute funded skeptical scientists who attacked findings of the intergovernmental panel on climate change, IPCC (see Balling 1992, Michaels et al. 1995; Singer 1996).

[230] Before the start of the conference in The Hague, a consensus was reached on what previously was a contentious issue: whether climate change exists at all. Most players seemed to agree that the Earth is warming up and that this will eventually have negative impacts on ecosystems and society unless governments take action now to reduce emissions of carbon dioxide. It seems as if the US has now moved away from this consensus.

both sides agreed that something had to be done in order to mitigate climate change. It was a matter of agreeing on the appropriate measures where the conflicts arose.[231] Interestingly, the advocates of the environment were divided (as was industry) with some US environmentalists supporting flexible mechanisms (such as carbon trading and reforestation) proposed by their government.[232] On the other side there were more radical environmentalists supporting the position of EU countries who suspected the United States to aim at a cheap deal.

Over the course of the last decade, the US reluctance has wavered between a principled objection to a climate treaty as such and an acceptance of it provided that the perceived burden on the US economy was kept at a moderate level. Presidents Bush Sr. and Jr. exemplify the first position, the Clinton administration the second. Clinton and Gore were expressing clear endorsement of the IPCC recommendations.[233] The problem was that they were held hostage by the US Senate that made it clear before Kyoto that they would not agree to binding greenhouse gas (GHG) reductions and subsequently did not ratify the Kyoto protocol (Harrison 2000). Therefore, the reluctant approach shown in Kyoto and the insistence on flexible mechanisms by the US delegation in The Hague reflects the fact that the US representatives (the official delegation, but also some environmentalists) think it is in the best interest of their country to use flexible mechanisms because they are cheaper and impose a lighter burden upon the US economy. They fear that a more rigorous approach would meet stiff domestic resistance. The leader of the US delegation in The Hague, Loy, put it this way: 'Nations can only negotiate abroad what they believe they can ratify at home' (*The Washington Post* 26 November 2000). This raises the question of why the US (at least from a European perspective)[234] was and still is less prepared to commit itself to stringent goals compared to the EU (Grubb 1999; Harrison 2000).

An obvious answer to this is the fact that US citizens have become accustomed to a lifestyle much more energy intensive compared to the rest of the world. Given the contemporary technostructure (fossil-fuel intense), this translates into higher levels of fuel consumption. In fact, per capita emissions of carbon dioxide are among the highest in the US—they are almost five times the global average (only Luxembourg and three small oil-producing countries exceed US per capita carbon emissions).

It would therefore require regulatory efforts on the part of the US government in order to increase energy efficiency. Such measures would probably include taxation which is not going to be very popular. This then raises the next question: why has the build up of public attention in the US been slow and weak? Here I will argue that in contrast to the ozone case, the advocates for regulation did not achieve what they aimed at.

The role of public attention

In order to do so, I shall focus on the work of the IPCC and its effects on the policy process. The argument will be made that the architects of the IPCC may have drawn the wrong lessons from the ozone case. My starting point is a statement from the late Austrian diplomat and negotiator during the talks for the Montreal Protocol, Winfried Lang. He described the confrontation during these negotiations between the (then progressive) US delegation and the (then reluctant) European Community in the following way:

> During the negotiations on the ozone layer it was the US-delegation, which by means of continuous contacts with the media tried to build up a climate of public expectations which should induce still reluctant delegations (mainly those with EC-membership) to agree to substantial reductions of emissions. Further research will tell us, whether the relatively flexible stance finally adopted by the European Community was brought about by this manipulation of public opinion from the outside or rather by an internal process of rethinking threats and options. (Lang 1994: 175).

The roles have been reversed but we are watching the same play, aren't we? Not exactly, since the EC, for a long time, did not take a leadership role and did not do very much to build up a climate of public expectation. The expectations raised by the media in the

[231] Ott (2001) has argued that the complexity of the issues on the negotiating table and a lack of leadership were to blame primarily for the breakdown in The Hague.

[232] Eileen Claussen, president of the Pew Center on Global Climate Change said: 'In the long-term fight against global warming, we need every tool at our disposal… If we take carbon sequestration and market mechanisms out of the equation, or bog them down with such overly restrictive rules that nobody uses them, then we are limiting our ability to meet our environmental objectives.' (*New York Times*, 26 November 2000).

[233] In his address on July 3, 1997 to the United Nations General Assembly Special Session, President Clinton noted that 'the science is clear and compelling' and wanted the United States to take a strong leadership role on climate change. In the autumn of 1997, Clinton's administration also instigated a campaign to build public support for the Kyoto treaty (Krosnick et al. 2000).

[234] Americans rightly point out that there is something hypocritical about the EU's position. The UK and Germany were the only two countries that made significant progress in reducing CO_2 emissions. This was largely the product of fortuitous circumstances (the shut down of mining in the UK and the breakdown of the East German economy after unification in 1990).

ozone case have in fact been much higher in the US than in the EC countries. Taking the example of the German press, in the weeks before the Montreal Protocol was passed there were only two reports on the topic in the German press, compared to eight articles in the *New York Times* alone (Grundmann 2001). Let us see if this correlation between a country's active policy and high expectations in the relevant public sphere[235] also applies to the climate conferences.

Conducting an online database research in Lexis®-Nexis® Executive, I compared media attention about climate change in selected countries (see Table 1 for an overview). I limited the search to German, UK and US media attention.[236] The search was performed for the periods leading up to and including major international negotiations: Berlin, 7 March-8 April 1995; Kyoto, 15 November-15 December 1997; The Hague, 1-30 November 2000; Bonn, 1-31 July 2001.[237]

Comparing absolute numbers of media reports in these three countries, US news reports score very high, especially around the Kyoto meeting (see table 1-1). However, the numbers of newspapers included in Lexis-Nexis vary across countries. Compared to German sources, US sources are represented at a much higher proportion (by a factor of 20). In order to avoid this imbalance, I calculated the relative values, dividing absolute numbers of news reports by the number of news outlets. Relative data reveal the paramount attention paid by Germany news outlets compared to both the UK and US. However, even this 'correction' of data has to be treated with caution. The Lexis-Nexis database seems to change over time, so it might not be internally consistent (see the Italian and Spanish data in Table 1-1). Apart from this, it is not clear how frequently the less important papers have reported on the issue. In order to avoid this problem, I reduced the number of press outlets to just one quality broad sheet in each country. Again it appears that the German media rates climate change more newsworthy than the other two countries. Taken together, there were 158 reports in the *FAZ*, 118 in the *FT,* and 83 in the *NYT*. German attention at the Berlin 1995 and Bonn 2001 conferences was far higher compared to the US and UK. Germany hosted these two international climate conferences and is also the home country to the UNFCCC secretariat (neither did the US nor the UK host an international climate conference during this period). Only in the case of the Kyoto and The Hague negotiations did *FAZ*, *FT* and *NYT* report on comparable levels.

If we look specifically at the reporting on these climate summits, and go back to total aggregated data, it emerges again that, apart from Kyoto, German attention was highest throughout. In contrast, US attention was low at the time of the Berlin conference, then rose for Kyoto, only to fall off for The Hague and Bonn. If we look at the establishment press, the *FAZ* dwarfs both *FT* and *NYT*—the *NYT* did not pay any attention to Bonn (for reasons of consistency I stuck to the search term "climate conference". The *NYT* did publish eight articles on Bonn, using the term "climate treaty", see table 1-8).

Apart from the difference in media attention, there is a difference in lobbying activities. In the ozone case, advocates of strict regulations operating out of the US, developed an aggressive campaign at the international level via the network of US ambassadors. US scientists were sent to other countries in order to convince them that there was a scientific case for regulations. US environmental groups, in particular the NRDC, initiated activities in Europe and Japan corresponding to those of the local environmental groups, which had to this point remained largely passive. In Great Britain this was seen as interference in British internal affairs. As Richard Benedick observed: 'Not until early 1987 did the efforts of some US environmentalists in the United Kingdom begin to pay off in the form of television interviews, press articles, and parliamentary questions about the government's negative policy. Indeed, these US private citizens were so successful that Her Majesty's Government in April 1987 asked the US Department of State to restrain their activities.' (Benedick 1991: 39).

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235 There is a difference between public opinion (as measured, e.g., through polls) and media attention (Gamson and Modigliani 1989). I chose to use the latter as an indicator of the agenda setting activities related to the policy process (cf. Baumgartner and Jones 1993; Mazur 1998; The Social Learning Group 2001). One reason for doing so is that elites listen more carefully to the published opinion as compared to the public opinion (they cannot ignore unpleasant news as easily as they can poll data). What is more, in most cases, media selection of issues predates public preoccupation. As eminent sociologist Luhmann noted, 'everything we know about our society, about the world we live in, we know from the mass media' (Luhmann 1996: 9). Mazur (1998: 459) asserts that 'public worry and government action rise and fall with the quantity of news coverage'.

236 Including all European languages would have made the search too cumbersome. Instead, I focused attention on those countries which were allegedly taking a lead on climate change in Europe.

237 Due to a lack of German data for the year 1992 I did not include the Earth Summit in Rio. Lexis®-Nexis® Executive only provides data for the *Süddeutsche Zeitung*.

	Berlin 1995	Kyoto 1997	The Hague 2000	Bonn 2001
(1) European and US news reports on climate (major stories only). Search terms: "clima!" / "klima!".				
Dutch News	3	111	185	121
German News	297	259	539	727
Italian News	0	27	5	70
Spanish News	0	1	0	212
French News	108	154	334	264
UK News	114	277	279	167
Total European	522	829	1342	1561
US News	160	1640	427	562
(2) Relative values, selected countries only. Ratio of above data under (1) compared to number of news sources (28 German sources, 235 UK sources, and 438 US sources).				
German News	10.61	9.25	19.25	25.96
UK News	0.49	1.18	1.19	0.71
US News	0.37	3.74	0.97	1.28
(3) News reports (major stories only) on "greenhouse" in UK News, US News, German News. Search terms: "greenhouse!" /"Treibhaus!".				
German News	73	163	196	173
UK News	58	182	140	99
US News	70	727	219	190
(4) Relative values. Ratio of above data (3) compared to number of news sources (28 German sources, 235 UK sources, and 438 US sources).				
German News	2.61	5.82	7.00	6.18
UK News	0.25	0.77	0.60	0.42
US News	0.16	1.66	0.50	0.43
(5) Establishment press on Climate Change. Search terms for NYT and FT: "greenhouse!" and place. Search term for FAZ: "Treibhaus!".				
FAZ	39	50	22	47
FT	20	55	24	19
NYT	3	53	18	9
(6) News reports (major stories only) on climate conferences in UK News, US News, German News. Search terms: "climate conference"/ "Klimakonferenz".				
German News	102	89	196	62
UK News	25	23	38	6
US News	45	110	84	38
(7) Establishment press on Climate Conferences. Search terms: "climate conference"/"Klimakonferenz".				
FAZ	31	41	13	33
FT	6	3	3	0
NYT	1	5	2	0
(8) Establishment press on Climate Conferences. Search terms: "climate treaty"/ "Klimakonferenz".				
FAZ	31	41	13	33
FT	0	1	0	2
NYT	0	8	8	8

All searches were limited to the following places and periods: Berlin, 7 March - 8 April 1995; Kyoto, 15 Nov-15 Dec 1997; The Hague, 1-30 Nov 2000; Bonn, 1-31 July 2001.

Table 1: Media reports, Source: Lexis®-Nexis® Executive [http://web.lexis-nexis.com/executive/], accessed 3 September 2001

Nothing comparable has happened in the climate case.[238] The embassies seem to have kept quiet, there was no need felt to send scientists around the globe since the IPCC arguably was set up as a world-wide operation to achieve exactly this task. For historical reasons, it is obvious that Europe is ill prepared to take on a missionary role vis-à-vis the United States but has been used to accept the reverse. Moreover, there is a lack of European co-ordination during the negotiations. Whereas the US represents a coherent position in negotiations with the EU, the latter demonstrates the 'unwieldy (and introspective) morass of EU decision making' (Grubb 1999:112). Last but not least, environmentalists thought that they were aiming for the same goals across the globe. Too much seemed to be taken for granted. The EC may have trusted the IPCC to do the job of getting everyone to agree to controls and therefore did not try to influence US policy from the outside. While the split in the ranks of the environmentalists is a recent (and maybe temporary) phenomenon and anyhow lies beyond the scope of this article, I shall focus on the role of the IPCC and show how the forging of a consensus among scientists was counterproductive.

Consensus as priority

By institutionalising international scientific assessments, the architects of the IPCC drew what they think to be an essential lesson from the case of the ozone layer controversy.[239] They tried to arrive at a consensus view on the scientific aspects of global climate changes, thus forming an 'epistemic community' (Haas 1992).[240]

Apart from other leading scientists such as John Houghton and Bert Bolin, Robert Watson played a key role in this process. In the beginning of the 1980s he perceived that CFC regulations would be hampered by the existence of many differing ozone assessments. At the time there were six different reports on the state of knowledge on ozone. Operating under the assumption that scientific uncertainty would make regulations more difficult, this could only lead to confusion and, above all, it gave the opponents of regulations welcome arguments. These reports were commissioned by the European Community, NASA, NAS, UNEP, WMO, and the British government. As Watson told me,

> At that stage industry and other people were looking rather at the differences than at the commonalities of the different studies. So I tried to work with the international science community toward a single international assessment (Author interview with Robert Watson, 21 November 1994).

Watson successfully led the international scientific community to write one single report. The first report was published in 1986 with several other reports following in 1988, 1989, 1991, and 1994. This reporting system provided a mechanism that allowed bringing together all relevant scientists and making them agree on a common position. While it is clear that these reports were used as scientific legitimisation for CFC controls, it is less from clear that they were the driving force. There is evidence that rising public concern created by a transnational network including advocacy scientists was much more important (Grundmann 2001).

The IPCC was founded in November 1988, sailing in the waves of enthusiasm created by the successful Montreal Protocol, by two UN bodies, UNEP and WMO. Its role is to review and assess the published scientific literature on climate change, its costs, impacts, and possible policy responses. It also plays a role in assessing scientific and technical issues for the UN Framework Convention on Climate Change (Shackley 1997). Therefore, the IPCC is modelled precisely after the WMO-UNEP assessment reports in the ozone case. In both cases, a standardisation and orchestration (Elzinga 1995) of scientific knowledge is seen as instrumental to get the right policy decisions. This follows a linear or 'technocratic' policy model according to which a scientific consensus can be transformed into political decisions.[241]

It has been remarked that insofar scientists adhere to this view, they must be regarded as rather naïve (Shackley and Skodvin 1995). Others have argued that the IPCC has primarily served the self-interest of the participating scientists in that they attracted huge funding resources and therefore stayed away from

[238] This could be one of the reasons why media attention on climate change stalled in the early 1990s. Mazur (1998) speculates about the reasons for this drop in media attention without mentioning this possibility.

[239] As has been shown above, climate change assessments were already carried out since 1979. However, they have been largely confined to the US. It was only after the international conference in Villach (1985) that an international assessment process was established.

[240] Haas (1992:187-8) defines an epistemic community as 'a knowledge-based network of specialists who share beliefs in cause-and-effect relations, validity tests, and underlying principled values and pursue common policy goals.'

[241] Although government representatives nominate scientists to be represented in the IPCC and negotiate the wording of the executive summaries of the reports, this does not contradict the claim that IPCC follows a linear or technocratic model of policy consultancy. The fact that government representatives nominated the scientists they nominated suggests that they themselves intended to make global climate change into a political issue (O'Riordan et al. 1998: 369). This 'orchestration of consensus' did not, however, extend to those powerful stakeholders and parts of the American public who were hostile to climate change regulations.

advocating specific policies (Boehmer-Christiansen 1995). To this, it has been replied that the avoidance of policy advocacy in IPCC reports is rooted in a desire to make the scientific information as effective as possible: 'For scientific information to be believed by the majority of participants in policy debates, it must be even-handed and not favour particular political or economic interests' (Moss 1995). Without doubt, the IPCC has succeeded in establishing a shared understanding of climate change that is accepted by many participants involved in building the climate change convention, although some powerful stakeholders seem unimpressed. But why has it been so difficult to implement the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol?

The case of ozone layer protection was different in that there was, before the consensus assessment reports, strictly speaking, no epistemic community. From the beginning, a few advocacy scientists (like F. Sherwood Rowland, Mario Molina and, later, Paul Crutzen) dared to combine their scientific judgements with political recommendations or demands. Rowland was not afraid to demand first a ban on CFCs in spray cans and then, after the discovery of the ozone hole in 1985/86, a general ban. Moreover, it was he who coined the metaphor of the ozone hole. His credibility and that of other advocates grew as time passed, particularly after the onset of dramatic events in 1985 (the ozone hole). In the 1970s and the beginning of the 1980s, Rowland was considered an extremist by many colleagues (Roan 1989). In the case of climate change the role to be played by advocacy scientists was curbed by the deliberate creation of an epistemic community. To be sure, back in the 1980s, climate researchers Stephen Schneider and James Hansen distinguished themselves as advocates of a policy of prevention. At public hearings, they did not hesitate to describe current extreme climatic events as expressions of anthropogenic climate change (most famously by James Hansen in the heat wave of 1988)—for which they were much criticised (cf. Nance 1991). With the IPCC, this activity largely subsided.[242] Climatologists thereby gained an exciting, relatively well-funded international research field, but at a price: they did not move beyond the boundaries of the official consensus. This gave sceptics and outsiders the opportunity to question the available findings, which they did in public, primarily in the mass media (see Gelbspan 1997). So in the end, all attempts at reaching a consensus view notwithstanding, debate and controversy could not be avoided. As a result, in this game, the IPCC advocates of strong reduction goals ironically were disadvantaged since fierce enemies of regulation seemed to dominate the public debate where they were not attacked by equally adamant advocates of regulation but by a consensus view that expresses the least common denominator.[243]

There is an argument about the difference in both cases that pertains to the salience of the threat posed by the two cases. Ungar (2000) holds that the ozone case represents a 'hot crisis' which is perceived by the public to have direct effects on their lives, while in the case of climate change we only have long-term, abstract threats. However, as the preceding paragraph has shown, there have been several attempts to link extreme weather events to long-term climate change. It may be the case that after Hansen's 1988 statement and the formation of the IPCC, 'reputable scientists routinely claim that any extreme … weather season cannot be attributed to climate change. Whether intentional or not, this dissociation effect has been abetted by the media.' (Ungar 2000: 308). In a different study on the US media, Ungar (1999) found no correlation between coverage of extreme weather events and stories on climate change. The picture in Europe is clearly different. In Germany, for example, the term climatic catastrophe is current in the mass media (Weingart et al. 2000:269), and UK papers routinely link extreme weather events to climatic change. Incidentally, the flooding of large parts of England at the time when negotiators gathered in The Hague was very much used by the media to foster expectations for a successful outcome of the meeting. So there seems to be a difference between the US and parts of Europe (mainly Germany) regarding the public's perception of climate change as a 'hot crisis'.

The upshot of the argument so far is that it is not

[242] What is more, Hansen (Hansen et al. 2000) recently has expressed some doubts: 'Dr. Hansen is considered the father of the theory of Man-made global warming due to his alarming testimony in 1988 before a United States Senate committee. Demonstrating a willingness to follow the evidence irrespective of where it may lead, he recently downplayed the conventional wisdom, which he helped spawn, that CO_2 was the predominant "greenhouse gas".' (*United Press International*, 20 November 2000).

[243] Just one example of how 'orchestration of consensus' works in practice. Late in 1999 when draft reports of the Third Assessment Report from Working Group II had leaked to the press, the co-chairs of Working Group III gave the following advice to lead authors for dealing with press inquiries about the draft WGIII report: 'the appropriate response is "no comment." Material in the draft report is embargoed from release to the press… For any author to comment to the press at this time beyond saying "no comment," could harm our credibility as objective assessors of scientific evidence. Until the review process is complete, any public comment on the content of the report or on press coverage of our activities can be interpreted as personal bias, and could be used by those who are looking for evidence to discredit our endeavors.' (Rob Swart, email to lead authors, 3 December 1999).

world-wide scientific consensus (or the lack of it), which explains the slow progress of the climate change policy but the (lack of) media attention in the US. From the argument put forward here it follows that the key variable in explaining the failure to agree to binding targets is the 'cool' US public (cf. Grubb 1999)[244] and the absence of advocates of a strong treaty who try to change this from outside. If there had been public concern about climate change in the US, the US delegation would have taken this into account at the negotiating table. To counterbalance public indifference to global climate change, a public discussion about all aspects would have been required. Recall the analysis provided by Lang according to which during the ozone negotiations 'it was the US delegation, which by means of continuous contacts with the media tried to build up a climate of public expectations which should induce still reluctant delegations … to agree to substantial reductions of emissions.' (Lang 1994: 175). The consensus-driven IPCC has inhibited this, precisely because it was so successful at consensus building. The fact that everyone in The Hague agreed to the science did not mean that negotiating a treaty would be easier.

The case of climate change reveals the limits of the technocratic policy model, since reaching a common scientific judgement does not necessarily mean that the problem can be defined and solved in concert. Problem definition is a much broader concept than scientific description of a problem; the former contains essential elements of a pragmatic, practical, and political dimension, which the latter, as a rule, forgoes. Yet what is more, as we know from other examples, scientific knowledge (or the absence of it under conditions of uncertainty) has no direct bearing on policy outcomes. Ozone is an example where prudent political action was taken under uncertainty. In the 1970s, CFC regulations were taken on the basis of (disputed) model calculations. At the time of signature of the Montreal Protocol, no commonly accepted scientific explanation of the ozone hole was available. Conversely, in many cases no political action follows from conclusive scientific knowledge or consensus expert opinion because economic and political factors are much more influential. Policy makers make use of expert recommendations as they see fit. Are scientists deceiving themselves? They may, understandably, feel flattered by the role assigned to them and many environmentalists may think that the IPCC is essentially a 'good' thing. However, as some powerful players around the globe could not influence the composition of this expert body they sponsored contrarian scientists. In the end, even provided that well-meaning politicians were intending to bind themselves to the findings and recommendations of IPCC (which seems plausible if we follow Elzinga's analysis in terms of an 'orchestration of consensus'), the consensus was not all pervasive. It took only a few but powerful stakeholders to dominate US public opinion.[245] In sum, scientific consensus can hardly be seen as the driving force in the process of adopting environmental regulations. These will be the product of a political process in which the public (via the agenda setting function of the mass media) has much greater weight. The contrarians seem to have understood this much better than the architects of the IPCC.[246]

Conclusion: Ozone simple, climate complex?

It would be foolish to downplay the differences of both cases. Both developed in historical time which is to say that many factors have changed since the signing of the Montreal Protocol, including the (lower) salience of environmental issues on the political agenda, the (self-) understanding of science and its accomplishments both among the public and the political system. However, both cases are path dependent and change our expectations as we move along in time. The fact that CFCs were the first class of industrially produced chemicals to be banned was unthinkable in the 1970s and 80s but now we seem to

[244] As indicated earlier, by public I mean mass media. However, there seems to be support for my argument also from poll data. Gallup's March 5-7, 2001 poll asked respondents to characterize the amount they worry about 13 different environmental issues as either 'a great deal,' 'a fair amount,' 'only a little' or 'not at all.' Only 33% of Americans told Gallup they personally worry about the 'greenhouse effect' or global warming a great deal. However, public concern over climate change has been waxing and waning over the years. The figures for previous years were: 35% in 1991, 24% in 1997, 28% in 1999 and 40% in 2000 (www.gallup.com/poll/releases/pr010409.asp).

[245] The *Seattle Weekly* (9 July 1997) described the process as follows: 'The Western Fuels Association's paeans to pollution, combined with strong-arm lobbying by oil industry groups such as the Global Climate Coalition and pseudo-scientific policy papers by conservative think tanks like the Marshall Institute, helped the administration derail international climate-change negotiations at the 1992 Earth Summit in Rio de Janeiro, Brazil. In the ensuing five years, under relentless fuel-industry pressure, negotiations have failed to produce any solid international commitments to fossil fuel reductions despite the increasingly grave warnings from the scientific community.'

[246] An other example is the 'chapter 8 controversy' where contrarians accused two leading IPCC scientists, Ben Santer and Tom Wigley, to have altered parts of the IPCC's Second Assessment Report in order to make it sound more dramatic (Seitz 1996; Singer 1996). The fact that they could do so, no matter how unjustified their allegations were (cf. Edwards and Schneider 2001; Santer at al. 1996) vindicates the fragility of the IPCC construction. For the contrarians it was sufficient to publicly cast doubt on the integrity of the IPCC. Since the public is less interested in the technical details of scientific debates the contrarians scored points ('mud always sticks').

take it for granted. Therefore, the measures of success and failure may also shift in historical time. IPCC scientists concentrated their main activity on scientific scenarios which are supposed to prove beyond reasonable doubt that climate change is real, human made, happening now, and problematic. They have been largely successful in doing so, but did not convince some powerful stakeholders who block ambitious GHG reductions. At the same time, the IPCC could not quite keep up with the speed of the political process which—due to the influence of these powerful stakeholders—had moved in the direction of exploring a range of 'flexible measures'. The difficulty to develop reliable and agreed-upon indicators (and monitoring instruments) has led to a deadlock in The Hague which, for the time being, was resolved in Bonn. It is open to speculations how this issue will be resolved in future negotiations.

Popular explanations for the difference between the two cases either cite the greater size or complexity of the problem of climate change, or how 'simple' it was to solve the problem of the ozone layer. In retrospect it may seem so, in accordance with a functionalist logic that declares solved problems to be easily solved problems. Upon closer examination, the ozone case was anything but simple. For almost twenty years, producers of CFCs throughout the world resisted regulation, in part by means of the same arguments which are still heard in the case of climate: there were, they claimed, no cost-effective alternative technologies. Such technologies came onto the market after the producers were forced to forgo the use of CFCs. The anti-regulation position was still so strong in 1987 that six months before the signing of the Montreal Protocol, Lang, then chair of the international ozone negotiations, claimed that no more than 10 to 20% CFC reduction was feasible in the next decade (*New York Times*, 28 February 1987).[247]

It is sometimes also argued that the greater objective importance of greenhouse gases for the world economy makes it more difficult to curb them (compared to the relative small importance of CFCs). The decarbonisation of the world economy will amount to a radical restructuring of its technical infrastructure. However, from the fact that GHGs are more central to the economy it does not *immediately* follow that it is more difficult to reduce them. This is a matter of technical alternatives, political instruments, economic incentives, and public support (Hawken, Lovins and Lovins 1999; de Leo et al. 2001). To be sure, the more central a technology is, the more one should expect powerful actors to defend it. This is the case since the number of potential veto players is likely to increase. But there is a reverse side, too: as more technical and business opportunities arise, more new players will enter the game. Only if it could be shown that it is nearly impossible to power the carbon-based economy with alternative energy sources would the argument of 'objective importance' be convincing.

It is striking how often the argument of the greater size and complexity of the problem is advanced—but it applies mainly to the reluctant US policy, not across the board. Such attempts seem to forget that Europe is making good progress in substituting fossil fuels with renewable energy sources. This means that the size-and-complexity argument does not hold. We are led back to the major question, Why has the US been so reluctant in taking climate protection seriously?

There is some truth to the complexity thesis with regard to the structure of business in both fields. While Du Pont was the market leader, and its change of direction set off a chain reaction, this has not occurred in the climate case and it is doubtful if it can. Here, there is no dominant producer from whom all others take their cue. However, European oil companies such as BP and Shell have given up their obstructive role. For example, in May 1997, John Browne of BP announced that the company was in favour of gradual reductions in carbon dioxide emissions: 'The time to consider the policy dimensions of climate change is not when the link between greenhouse gases and climate change is conclusively proven, but when the possibility cannot be discounted and is taken seriously by the society of which we are part. We in BP have reached that point' (Browne 1997: 55). BP's declaration could in any case be seen as a sign that oil producers no longer see their future exclusively in terms of oil and thus trigger a bandwagon effect.

But the real important difference between the two cases is as follows. A strong, publicly visible, transnational policy network that alarmed the world public and advocated strict controls decided the ozone controversy. The advocates of regulation owned public credibility, the scarcest resource in such controversies. In the climate controversy, however, there were no vociferous advocacy scientists acting all the way through the debate. What is more, one of the early advocates seems to have mellowed down. In a way, the early institutionalisation of the epistemic community in the form of the IPCC suppressed any open controversy, including the creation of a 'climate of expectation' across territorial borders. In order to

[247] It should be recalled that at the time, the idea of banning an entire class of industrially produced chemicals by means of international measures was completely outlandish. I am grateful to Konrad von Moltke for this suggestion.

preserve a consensus (of which too much was expected politically), the scientific controversy was silenced. This gave outsiders the chance to make their name in media and effectively cast doubt on the consensus, albeit being condemned as essentially unscientific by the IPCC. If all conflicting opinions would have been openly aired, then the advocates' justification could have made their case for a serious commitment much better—assuming that their credibility had increased over the years.

The construction of the IPCC as an international epistemic community committed to a scientific consensus has proven, on this view, to be somewhat counterproductive. The drive to establish a scientific consensus robbed the controversy of an essential dynamic. The gain in public credibility of those advocating for climate protection, above all in the US, has not been sufficiently achieved in the climate debate. However, this would have been the essential requirement to influence the US position at international talks. This is a speculative lesson which follows from the above analysis. If plausible, it would put into question the main lesson drawn by the architects of the IPCC.

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The Changing Role of Nation States in International Environmental Assessments: The Case of the IPCC

by Bernd Siebenhüner[*]

Scientific assessments like those conducted by the Intergovernmental Panel on Climate Change (IPCC) play a pivotal role in the interaction processes between public policy making on the national and international level on the one side and scientific research and policy advice on the other. When we define assessments as "the entire social process by which expert knowledge related to a policy problem is organised, evaluated, integrated, and presented in documents to inform policy or decision-making" (GEA, 1997, p. 53), their study becomes crucial for understanding how and why scientific information affect public policy making and political decision making as a whole.

It is only since very recently that comprehensive interdisciplinary research has addressed these issues in particular in the international sphere. Here, scientific assessments have been characterised as boundary organisations located in between the scientific realm dedicated to notions of truth and credibility and the political realm signed by interests, power and legitimacy issues (Jasanoff 1990, Gieryn 1996, Guston 1999). Based on these concepts, Clark et al. (2001) developed a theoretical framework to capture the relevant factors that determine an assessment's effectiveness in the process of policy making in particular fields of policy such as ozone regulation or the mitigation of climate change. In this framework, the relationship between science and policy in assessments is not only seen as a linear one but is conceptualised as a circular influence from science to policy making and from the political sphere back towards science and the assessment. In this perspective, the role of political actors such as representatives of nation states is of particular interest since they have a twofold function, on the one hand they have to pursue political interests of their country and on the other side they are part of scientific process which is dedicated to informing policy makers on the basis of the latest research findings.

Moreover, international assessments are part of an emerging system of global governance with a number of new institutions and organisations where nation states play a particular role. However, there a opposing views of their importance in the system of international politics: while one group of scholars describes the growing strength of international institutions as opposed to nation states (Young 1991, 1997), others deny international institutions the role as independent actors since they claim that all power is maintained by nation states (Grieco 1990, Waltz 1979). With the view to international environmental assessments as new form of international institutions, the question arises which role nation states play in them: Do they maintain their position as the only sovereign actor or do the international processes gain influence over the interests of nation states?

Therefore, this article investigates the role of nation states as actors in international scientific assessments in order to answer the following questions: (i) How could the influence of nation states in environmental assessments be measured? (ii) Is the influence of nation states in assessments increasing or decreasing over time and what does that imply for international policy making? (iii) What can be concluded about the role of nation states in the promotion of innovations in environmental policy?

These questions will be analysed based on the empirical case study of the internal processes in the Intergovernmental Panel on Climate Change (IPCC). Being the largest effort to assess the existing knowledge about an environmental problem so far, the IPCC has gained much attention by researchers as well as policy makers. Since its beginning in 1988, the assessment has produced three major assessment reports and a sizeable number of technical and more specific reports. Over time, the design of the assessment changed significantly which renders the case interesting for the study of changes in the role of particular actor groups in the process.

Before focussing on the case study, first some general characteristics of assessments at the science-policy interface and of the general functions of nation states in them should be discussed in section 2. In addition, this section provides some basic definitions and conceptual clarifications that will be applied to the case of the IPCC in the subsequent section 3. In this section, I will outline and analyse certain design elements of this assessment that seem decisive for evaluating the role of nation states and their representatives in

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the IPCC assessment process. Section 4 draws conclusions in order to answer the research questions posed above.

Assessments and their role in political processes

Assessments have been defined in various ways. Most of the available definitions focus on the output in form of reports, documentations or policy recommendations in order to capture the essence of an assessment. However, this approach underestimates the internal dynamics that lead to the final product. Therefore, assessments have been described more broadly as "the entire social process by which expert knowledge related to a policy problem is organised, evaluated, integrated, and presented in documents to inform policy or decision-making" (GEA, 1997, p. 53). This definition highlights the numerous and overlapping social processes within the production of a document or any other outcome of an assessment process, which seems to be crucial for the understanding of the final outcome.

Being established at the boundary between science and political decision making, political actors are regularly part of assessment processes in various functions and with different degrees of influence on the assessment process. In some assessments representatives from governments play an integral part in the process and are heavily involved in the preparation of the final documents while in others participation is restricted exclusively to scientists leaving policy makers without any measurable influence.

In any case, Lee (1993, p. 163f.) assumes that actors can only have one role in this field, they are either politicians or scientists. However, he acknowledges the existence of roles that lie in between both ends of the spectrum, such as administrators organising scientific knowledge for the purposes of political decision making and the professional analysts who build on their scientific knowledge in their practical activity in society, comparable to doctors or engineers. Recent case-study based research lead to somehow different conclusions stating that individuals might fill in several roles in this spectrum—sometimes in a very effective way (Farrell and Jaeger forthcoming). However, for the purposes of this article it seems reasonable to concentrate on the political end of the spectrum assuming that political decision makers in most cases stick to their role even though some might take over additional functions in the process.

The literature on boundary organisations considers assessments as the field in which the dividing line between the scientific and the political domain is constantly under negotiation (Gieryn 1996, Guston 1999). In these "boundary negotiations", it is decided who is entitled to deal with which kinds of issues. The outcome could be, for example, that scientists have to surrender to political imperatives or that policy makers are exclusively dependent on scientists and their recommendations. Whatever the outcome will be, this perspectives makes clear that there are no objectively given boundaries between the two spheres and that this line is subject to negotiations between various social actors. Thus, the role of nation states is not fixed in any kind of assessment but will vary calling for a case-by-case analysis as undertaken in the subsequent section.

In this context, social studies of science and technology have stressed the need for a perspective on the underlying norms of any kind of negotiation and assessment process. Thus, there is the idea of "good science" permeating through assessments which regards science as completely independent provider of knowledge governed by its own rules and quality assurance mechanisms whereas others see assessments as being directed by political needs including those fields of knowledge where uncertainty is high. Both views build on particular sets of convictions and norms (Jasanoff 1990). Most of the research scrutinising these norms and interactions between the policy and science has been conducted in relation to national regulatory processes such as US environmental policy.

Scientific assessments in the international arena have only recently entered the focus of social science research partly because they are rather recent phenomena that emerged in the context of international negotiations like those on the protection of the stratospheric ozone layer in the mid-80ies. On the other hand, it has to be acknowledged that international assessments face different challenges and in most cases exhibit somewhat different characteristics than national assessments. While national assessments remain in one cultural and political frame of reference, international assessments have to deal with a large diversity of political systems and ideologies as well as different scientific paradigms and capacities. These preconditions give nation states a distinct role in international assessment endeavours as examined in another research effort.

The particular challenges and approaches to international assessments have been addressed by the Global Environmental Assessment Project which provided the framework for numerous case studies and conceptual work in the field of international assess-

ments.[248] The project has examined assessment experience on a wide range of environmental issues, including climate change, stratospheric ozone depletion, biodiversity, acid and other tropospheric air pollutants, and toxic chemicals. The conceptual approach focuses on the analysis of the effectiveness of these assessments in political processes and within certain design features in this process. Accordingly, effectiveness has been framed as the impact an assessment has on the political decision making process in the related environmental issue domains such as climate change, biodiversity and alike.

It is the underlying conviction of the framework developed by Clark et al. (forthcoming) that the information being produced in assessment processes might influence what they call "issue development", i.e. changes in the political decision making in one issue domain. These changes could be caused through information when the assessment has attributes that foster its effectiveness. On the basis of the findings of the project it could be concluded that assessments are most influential when they attain to be salient to the potential users, credible in regard to the scientific methods, and legitimate in the way the assessment is designed. Thus the following three criteria have been identified:

- *Saliency:* An assessment process or its products are salient, when the participants in a certain area of policy making perceive them as relevant to them and their decision-making situations.
- *Credibility:* As assessment is regarded credible by a participant when he or she is convinced that the facts, causal beliefs, and options outlined in the assessment deserve to be believed. He or she decides that the information is either "true" or, at least, worth using instead of other information. For information to be credible, the recipient must be convinced that the facts and causal beliefs promoted in the assessment correspond to those that the user herself would have arrived at had she conducted the assessment.
- *Legitimacy:* The legitimacy of an assessment will be understood as its ability to convince a participant that the goals pursued in the assessment correspond to those that the recipient would used had he or she conducted the assessment.

In this conceptual framework, these attributes of assessments are determined by certain design elements that either hamper or foster the saliency, credibility, or legitimacy of an assessment. Among these elements, the involvement of nation states comes into play at different stages. I will delineate the role of nation states in assessments based on these design features which should serve as research categories for the subsequent case study. They pertain the design of the science-policy interface, participation issues, and the conflict resolution mechanisms in place.

DESIGN OF THE SCIENCE-POLICY INTERFACE

There are different options how to design interactions between scientists and policy-makers within assessment processes. On one end of the spectrum, interaction could be limited to an absolute minimum through isolating scientists from the policy process. On the other end, there could be an intense and thoroughly crafted collaboration between individuals from both fields. The interaction could take place in formalised settings with clearly defined individual roles or in loose forms of co-operation mostly maintained through personal engagement of certain individuals. Hence the influence of national governments hinges largely on the design of these forms of interaction.

According to the theory of boundary organisations, irrespective of its position on this spectrum each individual and group is well advised to maintain its self-identity and protect its sources of legitimacy and credibility. Whatever the formal interaction structures might look like, there is nearly always the opportunity for informal communication between the two groups. Thus, representatives from national governments could interact and somehow influence scientific processes through these channels even if there is no direct formal interaction institutionalised in the assessment process.

PARTICIPATION

The question of which individuals and organisations are allowed to take part in an environmental assessment, and when and how is of the essence for the assessment's saliency, credibility, and legitimacy. Participation in different phases of an assessment can vary substantially, there might be different actors involved in the phase of problem identification than in the process of conducting the assessment, or in the final communication of the results. Moreover, there is a spectrum of options how to arrange participation. Broad participation of many different individuals and actor groups such as governments, scientists from many related fields, NGO representatives, and business might be valuable for ensuring legitimacy and

[248] See http://environment.harvard.edu/gea for more information, including copies of the GEA working papers. In the near future, three volumes will be published out of this research: Farrell and Jaeger (forthcoming), Clark et al. (forthcoming) and Jasanoff and Long (forthcoming).

saliency, whereas an exclusive participation of scientists might be of great value for maintaining credibility.

The involvement of governmental representatives is regularly justified by the chances to ensure saliency and legitimacy, but they might also be valuable in maintaining credibility. Being somehow integrated in national policy making, these representatives firstly could help to strengthen the link between scientific advice and the policy world and to make the final document as user-friendly as possible. They could communicate political decision needs and the necessary substance and style required to make the final document read by other policy makers. Secondly, simply by being part of the process, these representatives could grant legitimacy to the assessment process since they provide a link to the political process of democratic representation of public opinions. Thirdly, government representatives could bring in their national science communities and their expertise which might enhance the assessment's credibility in scientific terms.

However, generally speaking, there should be a link between the environmental problem at hand and the participation of nation states. In transboundary assessments, the governments of those nations are well advised to participate who's national territories or people are affected by the problem in one way or another. They might be major contributors to damaging emissions or victims of these emissions or other results of the problem like sea-level rise in the climate change field. Thus, in problems of global scale such as climate change or ozone layer depletion, the participation of all nations will be advisable.

In assessments, participation related decisions could be separated in those regarding who participates and decisions about the rules and norms of participation. In case the latter decision has to be made by consensus, it might be problematic to incorporate many groups and nations with divergent perspectives and interests since it becomes more difficult to find final conclusions.

CONFLICT RESOLUTION

The situation of numerous national interests and views being involved in international assessments necessitates a clear procedure how to solve conflicts. Many environmental assessment processes have to operate under some form of consensus principle which requires that the assessment products must achieve unanimous support (or at least no strong objections) before their release. Another approach to dealing with differing opinions by the participants is to allow for "dissenting opinions" by a minority of the participants. Other approaches comprise the establishment of competing assessment processes and the inclusion of "minority reports". Probably the most typical but scarcely formally announced rule for assessment processes is to omit areas of great dissent from the process. In particular, legitimacy issues are affected by conflict resolution mechanisms. Consensus principle guarantees every participant an opportunity to veto the process and is perceived to be the fairest mechanism in UN procedures which endows each participating nation state with this kind of veto largely irrespective of economic or military power structures of these states.

The role of nation states in the IPCC

Which role do nation states play in a large-scale international assessment like the IPCC? How did this role change over time as measured in terms of the three criteria developed above? What can be concluded about the role of nation states in the promotion of climate change mitigation policy? The following case study will address these questions based on the investigation of the IPCC and its changes over time.

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 and has been designed as an intergovernmental organisation that should assess the existing scientific knowledge on the causes and impacts of climate change, as well as mitigation strategies. It is the largest effort of its kind and meanwhile claims are being articulated calling for similar assessment processes in other fields such as biodiversity or water issues (WBGU 2001). Moreover, it provided the blueprint for the ongoing Millennium Assessment.

Since its beginning, the IPCC has produced three major assessment reports (concluded in 1990, 1995 and 2001) and a sizeable number of special reports and technical papers as well as supporting materials such as guidelines and documentary materials. Over the years, the IPCC has undergone several changes in regard to the internal structures and procedures which will be analysed in relation to the role of nation states. The central criteria for this research with regard to nation states are the four design elements identified above: the design of the science-policy interface, participation, and the conflict resolution mechanisms.[249]

[249] This case study is based on an analysis of written documents and on personal and telephone interviews conducted in 2001 with nine high-ranking officials of the IPCC.

CHANGES IN THE SCIENCE-POLICY INTERFACE

Being an organization at the interface between science and policy, the IPCC is thought to fulfill a two-fold purpose. It should provide credibility to the scientific community on the one hand and is intended to feed scientific and technical information into the political negotiation and implementation processes on the other. Therefore, it is worth questioning how the interaction between scientific experts and the political community is designed, in particular in regard to the role of national governments and their representatives in this interaction. Because of the high level of contestation inherent in the issue of climate change and the political options involved, this interface has been crafted very carefully over the time being.

The official interaction between scientists and policy makers is restricted to well-defined stages of the assessment process. It is the scientists of the Bureau[250] who develop an outline of the report, the topics of the working groups and the division of labor among them. They suggest it to the national governments at the plenary session, where a final decision is to be taken. Then they select the authors and reviewers based on the principles of scientific expertise and geographic representation. Governments could nominate candidates in this phase but it remains with the members of the Bureau to select the most appropriate authors. By contrast, the whole process of the preparation of the chapters and the first round of peer-review remains exclusively in the scientific realm since it is carried out exclusively by scientific experts. Governments enter the process once again in the second round of review when their comments are being solicited. Finally, they have a crucial role in the approval of the summary for policymakers and the synthesis report where their agreement to every line is required. Government representatives have to attend plenary sessions of the Working Groups and discuss and approve the documents presented to them in a line-by-line procedure.[251]

The approval of the synthesis reports of the first and second assessment lead to major discussions among the government representatives that could hardly be consensually concluded. Consequentially, the procedures concerning the Synthesis Report have been changed significantly in the third assessment. Firstly, it addresses a list of key questions that have been developed in consultation with officials from the negotiating bodies of the FCCC.[252] Secondly, the Synthesis Report will be split into a longer document that has to undergo a hitherto unknown section-by-section approval process whereas the more focused Summary for Policymakers of the Synthesis Report has to be approved line-by-line which means in practice a word-by-word approval, according to participants in the plenary sessions (IPCC 1999). Thereby, a high degree of saliency for policy makers is ensured granting significant influence to the group of national governments.

In terms of organizational structures, the science-policy interface in the IPCC assessment processes is filled with a number of committees (see figure 1). From early on, a Joint Working Group (JWG) between the IPCC and the negotiating bodies was established to facilitate direct communication among the scientific and political committees.[253] On the side of the IPCC, the Group consists of the chairperson of the IPCC and a number of members of the Bureau, on the side of the FCCC the delegation includes the director of the UNFCCC-secretariat and several of his/her staff members as well as members of the Subsidiary Bodies under the convention. The Group provided a comparatively informal forum to discuss the projects of the IPCC and the information needs of the negotiation processes. Since the group was established at a rather advanced stage of the second assessment report, its influence in this phase remained limited. During the preparation of the Third Assessment Report, it became significantly more influential. The Joint Working Group met on a regular basis and had impacts especially in regard to the introduction of a new type of specialized IPCC reports, such as special reports on land use and land cover changes (Watson et al. 2000), or on the role of aviation (Penner et al. 1999).

Apart from this Group, the Convention established two standing bodies consisting of government delegates: the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI). It is the task of the former to advise the negotiating parties on scientific, technological and methodological matters relating to the Convention. Therefore, it should link scientific information provided by the IPCC to the policy-oriented needs of the Conference of the Parties (COP). In this function, the SBSTA has to cooperate

[250] The Bureau of the IPCC consists of the chairman and the vice-chairs of the IPCC and of the co-chairs and vice-chairs from all the working groups.

[251] The summaries for policymakers are intended to provide the essential information of the assessment reports of each of the three Working Groups to policy makers in a less technical language. The synthesis report encompasses all the relevant information of the work of all three Working Groups.

[252] See *www.ipcc.ch/activity/tarquestion.html.*

[253] The group was founded in 1993 based on an initiative of IPCC-chairman Bert Bolin. After the first Conference of the Parties under the FCCC in 1995, it acquired its current title as IPCC/UNFCCC Joint Working Group (Agrawala 1998a).

closely with the IPCC and could request specific studies from it. The latter, the SBI, is in charge of the assessment and review of the implementation of the convention. Among others, it has to examine the national emission inventories submitted by the parties and, thereby, has to cooperate particularly with the IPCC Task Force on National Greenhouse Gas Inventories (TFI).

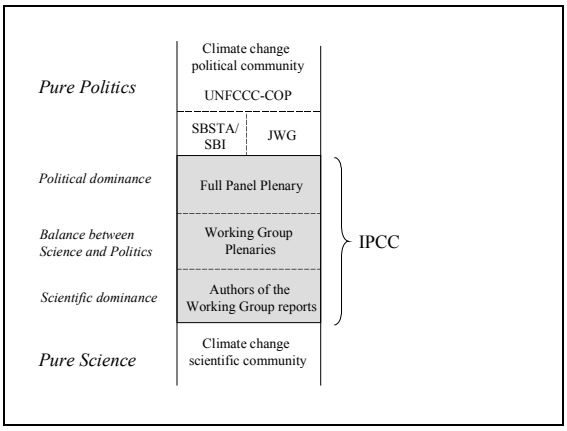

Figure 1: The Science-Policy Interface at IPCC

(Source: Based on Alfsen and Skodvin 1998)

Participation is open to all national governments who are parties to the convention, and governments usually send representatives who are experts in the fields of the respective bodies.

Whereas the SBSTA is more closely linked to the scientific world, participants of the SBI face a much more politicized task which even might intrude into national politics. Although national governments could participate in the Body, they have limited influence on the outcome given the great number of parties. Moreover, they have to face the threat that this Body could decide in disfavor for them when implementation issues are being negotiated. Although these bodies do not have the authority to enforce sanctions, image effects of a critical discussion of a country's performance in CO2-emissions are already sizeable. Therefore it could be concluded that the introduction of the subsidiary bodies to the climate convention have decreased the influence of individual national governments in the assessment process in the climate change area.

PARTICIPATION OF NATION STATES

Before the IPCC started its work in 1988, there were intense discussions about the proper set-up of a new assessment on climate change given existence of numerous national assessments based on highly renowned scientific expertise (Agrawala 1998b). However, Bert Bolin, who became the first chairman of the IPCC claimed: "Right now, many countries, especially developing countries, simply do not trust assessments in which their scientists and policymakers have not participated. Don't you think credibility demands global representation?" (cit. after Schneider 1991, p. 25) This conviction was the initial idea for the intergovernmental organisational set-up of the IPCC and the governmental approval mechanism.[254]

Since its launch more and more governments participated in the plenary sessions of the IPCC where the final documents had to be approved. Whereas the first session was attended only by representatives from a total of 30 countries, at the ninth session in 1995 their number totalled 117. Subsequently, participation in the plenary sessions varied between 80 and 110 countries represented. It is already these numbers that indicate a decrease in the influence of the individual national governments given the increase of total participation of countries. Due to the rising numbers of representatives from the policy world, the whole process changed over time. When it was very loosely organised in the beginning, the procedures became more and more formalised and institutionalised.

The increase in participation certainly mirrored the growing awareness of the problems of climate change on the side of national governments and the key role of scientific advice in this issue. In particular, a growing number of developing country governments sent delegates to the IPCC plenaries in order to have a foot in the door to the scientific and thereby also to the political negotiation processes. Consequently, the percentage of participating countries from non-OECD countries grew from nearly 50% to over 80% in the first 7 years of the IPCC (Agrawala 1998a). Although many of their representatives had much less expertise on climate issues than their colleagues from industrialised countries, they formed an ever stronger subgroup in the IPCC. However, the developing countries seldom share a common position in the plenary sessions due to their diverse interest structures. Oil-producing countries often pursue largely different lines of argumentation than the so called AOSIS-states which are in danger of loosing their territories through rising sea-levels and therefore stressing the need for urgent action while the former regularly emphasise the persisting uncertainties. Thus, it is more specific interest structures that dominate the IPCC process from the political side rather than mere national interests. It is not nation state by nation state that maintain and pursue certain positions or strategies but groups of states determined by their

[254] For a description of the approval mechanisms see next section.

involvement in the underlying problem. Here, one finds another incidence for the shrinking influence of nation states in the field of climate change assessment. A very similar tendency could be found in climate change negotiations themselves where political and economic interests have a much stronger stance than in the scientific assessment process.

Participation of government representatives is only one side of the coin, nation states also take part in the IPCC process by appointing scientists and allowing them to participate in the IPCC as authors, reviewers or in other functions. One of the key issues of the design of the IPCC was the struggle for balanced participation of scientists from all parts of the world. Since the international setup and the involvement of governments from all over the world was the centerpiece of the IPCC, participation of experts from all regions of the world was regarded as crucial for the acceptance of the assessment results by policy makers in the industrialized North as well as in the developing South. As expressed by WMO Secretary-General Godwin O. P. Obasi, it was the initial goal that the IPCC should ensure membership of the major greenhouse gas emitting countries, of all geographic regions and of those countries with outspoken scientific expertise in the field. Since experts from the developing world, in particular, lacked the necessary funding opportunities and a great deal of crucial research capacities, their participation has been a constant subject of debate in the IPCC Bureau (Agrawala 1998a). To deal with this problem, the "Special Committee on the Participation of Developing Countries" has been established in the early 1990s to find ways to increase their participation. Moreover, quotas were fixed for the composition of the main IPCC committees and funding opportunities for travel expenses were introduced to allow participants from developing countries to attend the IPCC meetings. Thereby, the segment of experts from these regions increased over time but the representation of world regions among the IPCC lead authors is still not equally balanced in all Working Groups. However, insiders in the process are covertly critical in many cases where experts from developing countries are involved who limit their engagement to a minimum due to lacking time, financial and research capacities and sometimes due to lacking expertise. Therefore, experiences with the broad involvement of individuals from all parts of the world in the core of the scientific process are mixed as far as credibility standards are applied. The integration of scientists from developing countries doubtlessly increased the IPCC's legitimacy since many policy makers in particular from developing countries questioned the legitimacy of assessment documents that were exclusively prepared by Northern scientists, like in the case of the ozone assessment.

The role of nation states in IPCC-conflict resolution mechanisms

To ensure the IPCC's scientific quality and credibility to both the scientific and the political community, a specific and highly sophisticated type of review procedure has been developed over the time being. Whereas in the first assessment each chapter had been reviewed by two or three experts and governmental officials simultaneously, in the second assessment the review process was much more refined. The review process took place in two rounds. First, the drafts prepared by the lead authors were circulated among specialists in the area at hand, other lead authors and experts from relevant international organizations. In the second round, the revised drafts were distributed among governments soliciting their comments. Normally, governments send these drafts to ministry officials, to scientists or to individuals at the boundary between science and policy, such as heads of research and advisory institutions in their country. Through this procedure, national governments are credited a significant influence on the assessment process and they are allowed a thorough insight into the preparations of the documents which enables them to prepare themselves for the final approval sessions. Finally the lead authors had to include the comments into a final draft that was submitted for acceptance to the Working Group Plenary meeting. While the lengthy chapters in the bulk of the IPCC reports only require the acceptance by the Working Group, the shorter and more focused executive summaries and the summaries for policymakers have to be approved line by line by the IPCC Plenary consisting of all the government officials (Edwards and Schneider 2001).

The main intention of this iterative review and approval process was to "ensure that the reports present a comprehensive, objective, and balanced view of the areas they cover" and not to allow for the intrusion of political or economic interests in the assessment process (IPCC 1995). Although many government officials often feel tempted to introduce politically biased statements into the reports to promote their national interests, experiences with the intergovernmental approval process have shown that it cannot do major harm to balanced and scientifically solid reports. Many participants in the process admit that there have been considerable arguments at the plenary sessions over the wording of the summaries

for policy makers, but most of them share the conviction that the conflict resolution mechanisms in place works out inasmuch as it leads to a neutralization of extreme positions among the government delegations. Due to the consensus principle all delegates have to agree to the final wording. Opposing positions have to be articulated and explained in the plenary session and if no compromise between opposing positions can be found, the discussion will be continued in smaller contact groups. Although this mechanism in most cases delivers acceptable solutions, sometimes certain countries try to push their claims even further. If absolutely no compromise could be reached in the small groups, a dissenting vote will be included in the text naming the dissenter. Since his dissent is made public through this procedure, countries usually dislike to fall back on this option—especially because it is mostly the same small number of countries with clear political or economic interests, like the major oil producing countries that try to weaken certain statements in the report (for examples cf. footnotes in IPCC 1995). Therefore, they have to fear loss of reputation and credibility when they cannot provide sufficient scientific or technical arguments for their positions. Experience has thus shown that these procedures could not lead to significant changes or a weakening of the final documents. In sum, although nation states are granted a sizeable influence in the final approval of the documents, in particular of the summary for policy makers, the rules and the informal dynamics of the process are strong enough to level out national biases and interest-based claims.

The third assessment report stuck to these procedures and added so-called "review editors", who were in charge of supervising the process of peer-review by tracking the comments from the reviewers and the resulting changes in the drafts prepared by the lead authors (IPCC 1999). Although the review editors were another element in the review process, the additional time requirements for this remained marginal. Nevertheless, not all authors regarded the introduction of review editors a completely helpful improvement of the process, since not all of the review editors were similarly diligent in fulfilling their job. While some regarded it rather trivial, others took their demanding task very seriously—a task that required reading and consideration of the various versions of the chapter drafts and of up to 200 comments. This process provided another element of the already highly sophisticated rules of procedure which eased the influence of individual national governments in the assessment process.

Conclusions

In the attempt to grasp the role of nation states in international assessments this article employed three criteria which have been identified as being relevant for an assessment's effectiveness in the political process. Firstly, the design of the science-policy interface is crucially important not only for the effectiveness of the assessment itself but also for the possible influence national governments could have on the assessment process and through that on international politics. Secondly, the simple presence of governmental representatives in the process has been found as a fruitful criterion for the measurement of the influence of individual nation states and of the group of nation states as a whole. Governments have to be integrated in the exchange of information within the assessment process in order to be able to influence the process. On the other hand governments could even have a grip on the process through the involvement of scientists from their country which do not necessarily have to maintain government positions but they might communicate national research priorities, standards or convictions. Thirdly, the design of conflict resolution mechanisms in assessment processes seems relevant for the influence of nation state governments. Voting procedures as well as measures for quality assurance such as peer-review mechanisms have proven to be elementary for who has a say in the assessment process.

By and large, the analysis of the role of nation states in the IPCC based on these three criteria revealed a decreasing tendency in their influence on this international assessment process. The design of the science-policy interface between the IPCC and the political negation processes in the framework of the COP-conferences has evolved tremendously since its beginning in 1988. Ever more institutions have been established at this boundary leading to a decreasing influence of individual nation states in the whole process due to the growing rule of new institutions and mechanisms on the intergovernmental level. In addition, the increasing participation of more and more nation state governments in the IPCC sessions and in the review procedures reveals a similar tendency. Putting it in more generalized terms, one could maintain that more players lead to a decreasing influence of the individual player. However, national governments still have an influence on the review procedures and they are granted their veto-power through the consensus principle. On first glance, these incidences provide good arguments for the thesis of an increasing influence of nation states over time, but a closer view on the experiences with the decision making procedures within the governmental approval

mechanism in IPCC could show that individual nation state interests are levelled out in their influence on the whole process.

What can be concluded about the role of nation states in international political processes vis-à-vis national political strategies to combat climate change? Given the assumed relationship between the design elements, and the overall effectiveness of an assessment, we could conclude that the evolution of the IPCC has lead to a decreasing influence of national governments on the climate negotiation process through the assessment process. Whereas this influence is rather indirect, national governments as parties to the COP certainly and directly influence the international political process. To assess the changes along this path throughout the different phases of the climate negotiation process would be a promising topic of further research.

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Part VII

Nation States and World Markets

The Effect of the Private Sector on the Nation-State and its Influence on Chile's Environmental Regulatory Framework since 1990

*by Dante Figueroa**

This article examines the situation of environmental protection in Chile since 1990, when Chile regained its democracy. Prior thereto, no widespread awareness existed about environmental protection in Chile, either in the public or private sectors. This lack of awareness was reflected in the fact that few regulations aimed at protecting the environment were promulgated prior to 1990. Since 1990, therefore, one of Chile's greatest challenges has been economic development, with a heavy focus on attracting foreign investment, within a context of democratic government, sustainable development, and respect for the environment.

Beginning from 1990, a greater degree of environmental awareness became visible in Chilean public policy, as laws protecting the environment were promulgated. One of the reasons for this policy shift was the influence of international trade, due to the demands of consumers and competitors in countries importing Chilean products, and international private organisations as well as parent companies of Chilean affiliates. The influence of these actors on the improvement of existing Chilean environmental standards and practices is called "horizontal influence."

The most significant legal development in this area occurred in 1990, when a bill was introduced in the Chilean Congress for the "Law on Environmental Bases" (the "Environmental Law"). This law was finally approved in 1993 after an intense debate. It reflects the viewpoints of the two most important political groups in Chile, the centre-left and the right, such that it cannot be qualified categorically as either pro-business or pro-environment. For example, the law establishes the obligation to conduct an environmental impact assessment of certain projects that could cause environmental damage, but it does not grant the authorities the power to suspend such projects if they are commenced without environmental authorisation.

Among other provisions, the Environmental Law contains: (i) definitions concerning environmental issues (i.e. pollution, environmental damage, emission and environmental quality standards); (ii) procedures for obtaining environmental authorisation of new projects and the modification of existing ones through the Environmental Impact Assessment System ("EIAS"); (iii) procedures regulating the participation of communities, businesses, and other interested parties in decisions impacting the environment; (iv) procedures for declaring saturated and latent zones; (v) requirements for decontamination and pollution prevention plans; and (vi) procedures for assessing environmental damage and claiming compensation.

It should be noted that the Environmental Law's promulgation did not derogate existing laws, which already provided a certain degree of environmental protection in different areas, such as public, animal, and vegetable health; national protected areas; fishing quotas; liquid emissions to waterways; landfills; and residue disposal. The primary purpose of these laws, however, is not to protect the environment. Rather, they regulate certain issues important for economic production activities, principally with respect to natural resources (i.e. mining, fishing, and agriculture). Today, these laws co-exist with the Environmental Law.

Several criticisms have been presented during the Environmental Law's eight years in force, namely:

(i) Certain activities should be subject to the EIAS that are currently exempt therefrom, such as:

- The harvesting for export of certain native vegetative species found in the "lake zone" in southern Chile, an activity that has caused significant negative externalities, primarily wetland loss;
- The introduction in national territory of live exemplars, embryos, and eggs of exotic animal species; animal and vegetal transgenetic material; and seed species or varieties that could upset the ecological balance;
- Plans for closure and abandonment of mining sites;
- Aquaculture concessions and the impact thereof on marine environments, especially lakes in southern Chile; and
- The use of agricultural chemicals on agricultural plantations.

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(ii) Pursuant to the Environmental Law, all damage caused to the environment is not subject to indemnification; rather, damage that is "significant" is indemnifiable.

(iii) The Environmental Law does not impose strict liability on dangerous activities, and it imposes a high burden of proof on plaintiffs. As a result, the majority of lawsuits brought for environmental liability pursuant to the Environmental Law have been rejected due to lack of proof.

Notwithstanding these criticisms, the Environmental Law has represented an advance when compared to the situation that existed prior to its promulgation. In particular, the environmental authority (the National Environmental Commission, "CONAMA") has approved several environmental protection regulations pursuant to the authority granted thereto by the Environmental Law, such as emission and environmental quality standards, and decontamination norms, which did not exist prior to 1993. Nonetheless, important regulations are still pending, with respect to soil protection, residues, biodiversity, and environmental easements.

In the light of this existing regulatory framework, numerous environmental challenges exist for Chile's globalised economy, which affect in particular the Chilean export sector. As noted above, however, regulatory silence on environmental matters has been attenuated by requirements imposed on Chilean exporters by international trade actors. The areas of economic activity in Chile that have been affected by horizontal influences are: the mining sector, with an emphasis on the closure and abandonment of mining sites; the fishing sector, particularly salmon cultivation; and fruit cultivation activities, particularly with respect to the use of agricultural chemicals.

Environmental issues in the mining sector

Mining is one of the most important sectors of the Chilean economy. During the 1990s, the mining sector accounted for nearly 40% of Chilean exports. The industry is comprised of over 200 companies. Chile is the world's largest copper producer and exporter; the second largest producer of rhenium, lithium, iodine, and molybdenum; the fifth largest producer of boron; the seventh largest producer of selenium; eighth in silver; and tenth in gold. After copper, gold is Chile's most important mineral export commodity.

Both state-owned and private sector companies operate in Chile's mining industry. The great majority of copper producers were expropriated in 1971, and were later consolidated into one state-owned company, *Corporación Nacional del Cobre de Chile* ("CODELCO"), which is Chile's largest mining company. Since 1992, CODELCO has been entering into agreements with private sector investors and developers in order to exploit existing mining operations, as well as unexploited mineral deposits. Another state-owned mining company is *Empresa Nacional de Minería* ("ENAMI"), whose mission is to encourage small and medium sized mining producers.

Notwithstanding the importance of CODELCO and ENAMI in terms of their size, private-sector mining production now exceeds that of state-run mines. The private sector is dominated by a dozen large multinational companies, which are jointly or individually involved in a large number of mega-projects that are currently operating or are in an advanced stage of preparation.

Government-owned companies and private companies have both responded to environmental challenges posed by mining activities. On one hand, CODELCO has adopted a number of measures in response to a series of public concerns in recent years. For example, it will invest large sums (US$300 million) between 2001 and 2006 for decontamination plans regarding atmospheric emissions and liquid and solid waste produced by its mines and it already invested approximately US$727 million between 1994 and 1999 for such purpose. It will also obtain ISO 14001 certification in 2003. Finally, it will relocate a mining camp for environmental reasons in 2003, due to arsenic and sulphur emission associated with its activities. Nonetheless, CODELCO has faced difficulties in the execution of its corporate environmental policy.

Many of the privately-owned mining operations in Chile that are affiliates of multinational companies from countries such as the United Kingdom, the United States, South Africa, Finland, Australia, Canada, have made the decision to comply with the environmental requirements of their home countries, even with respect to their operations in foreign countries that do not impose similar requirements. Some of these private mining companies have adopted policies designed to safeguard the environment that are more stringent than the Chilean environmental regulations in effect. Many of these measures have been taken in response to parent companies requirements, some of which have been imposed as an answer to shareholders' concerns.

Thus, private-sector mining companies have played a growing role in facing the principal environmental

problems associated with mining activities, including the pollution of air, water, and soil, and risks posed by abandoned mining sites and tailing dams. Accordingly, the measures that this sector has adopted will be analysed with respect to the following areas: air quality, water quality, soil contamination, and plans for the closure and abandonment of mining sites.

AIR QUALITY

A number of regulations exist in Chile regarding air quality. CONAMA has also issued certain regulations with respect to contaminating atmospheric emissions within national territory.

Nonetheless, many criticisms of mining companies' conduct exist in this area. First, the regulations that have been issued apply equal treatment to emissions throughout the entire country, rather than singling out locations that could experience more severe air pollution, such as areas where mining sites are located. Also, the contaminants that are regulated are not all those which, according to the scientific community, should be regulated. Recently issued regulations do not take into account historical damage. Finally, quality standards are lower than those that apply to similar types of mining sites in the northern hemisphere.

In turn, private mining companies have responded to these criticisms. For example, prior to the promulgation of atmospheric emissions regulations, some private mining companies realised their own emissions studies, the results of which they provided to the authorities, and much of the information provided voluntarily to the authorities served as the basis for the regulations that were eventually issued. Private mining companies have brought to Chile different technologies for controlling contamination, which also otherwise would not be available in the local market, and a number of companies are subject to the internal auditing departments of their parent companies, some of which require their Chilean affiliates to submit to third-party inspections.

WATER QUALITY

Mining production has some of the highest water requirements of all industrial activities. In Chile, mining companies—both public and private—possess a large percentage of available national water resources. Foreign mining companies have demonstrated significant concern for the impact that their operations produce on surface and groundwater in nearby areas. Private mining companies have adopted a number of measures with respect to water quality. For example, they voluntarily carried out environmental impact assessments of liquid discharges in waterways prior to the entry in force of the Environmental Law, some as early as the 1980s. In many cases, these evaluations were sent to the authorities, which made it possible to gain a historical perspective on the behaviour of such companies with respect to water pollution.

SOIL CONTAMINATION

The risk of soil contamination due to mining activities exits throughout Chilean territory. Among matters that are not regulated in Chile are the use of abandoned mines for purposes other than extractive mining activities, such as their use for residue deposal.

In this area, private foreign mining companies have taken a series of measures to alleviate soil contamination in the areas where their work sites are located. For example, affected soil is irrigated, in order to diminish the production of mineral-containing dust that could affect nearby areas used for human habitation or agricultural purposes. Certain of these companies have contracted leading Chilean university laboratories in order to detect existing soil contamination levels, and the results of these studies are usually available to the authorities and, occasionally, the public. Another common measure employed by private mining companies is the purchase of abutting lands that are deemed polluted or that could become polluted as a result of company activities. Companies have planted forest plantations in some of these areas, which, in addition to giving these areas a productive purpose, shows that the companies have taken necessary measures to keep these soils healthy enough to support productive vegetative growth.

CLOSURE AND ABANDONMENT PLANS

One of greatest challenges for the mining sector in Chile—both government and private companies—is the clean-up of abandoned mines, tailing dams and facilities. Some of the principal risks related to this issue concern the contamination of rivers, lakes, and waterside areas, and problems due to seismic events, floods, avalanches, land movements, and acid drainage. This is a particular concern in Chile due to the fact that the majority of Chile's mineral deposits are located in the Andes mountain range, in areas with pronounced slopes that facilitate the drainage of water and tailings into valleys.

The Environmental Law does not require plans for the closure and abandonment of mining sites to be submitted to the EIAS, due a lack of agreement on the issue among the Congress when the law was approved. One of the principal arguments for not

submitting this matter to the EIAS was that the high cost associated therewith could force government mining operations to spend money that the country either does not have or could spend on other more important projects. It was also asserted that the varied nature of mining operations taking place in Chile made it impossible to establish uniform criteria.

The experience subsequent to 1990, however, has demonstrated that it is essential that closure plans for mining sites be subject to the EIAS. This is particularly the case considering that several gold mining operations have been closed since 1998 due to low international gold prices. For this and other reasons, realisation has been growing among the authorities that it is necessary to regulate such closure plans, especially with respect to the long-term negative environmental consequences of abandoning mining sites, the high cost of implementing closure and abandonment plans, and allocation of liability for damages that could result, particularly with respect to companies that no longer have operations in Chile.

Given this context, the government is currently preparing rules applicable to this issue, although it is still not known whether they will be promulgated as a law or regulations. The most recent version of the proposed rules contains various requirements, including obligatory environmental assessment of closure and abandonment plans, monitoring of air quality and solid and liquid wastes, and obtainment of environmental damage insurance.

Foreign mining companies have taken note of these developments, and, as a result, they have gradually begun to submit closure and abandonment plans to the authorities for informational purposes, due to the fact that such submission is not legally required. The most common practice has been to submit these criteria that will govern closure and abandonment. However, these generally do not specify how the former mining sites will be used, but rather provide that the respective mining company will make that decision at the time of closure and abandonment.

The private mining sector, particularly foreign companies, has been heavily involved in the negotiations regarding the current bill, and its influence could have a determinative effect on the texts that are eventually approved. In the meanwhile, however, the decisions of private actors will be crucial for environmental protection in this area, in terms of whether they choose to design and finance mining site closure plans, as well as whether they judicially challenge the requirements that the authorities may eventually impose.

In this area, horizontal influence has been fundamental for encouraging measures for making closure and abandonment plans mandatory in Chile, primarily as a result of the Chilean government's desire to avoid allegations of "environmental dumping" based on the fact that mining companies in Chile do not have to provision such plans in their budgets. This is due to the fact that it could be argued that the lack of any requirement to provision funds for closure and abandonment plans constitutes the amount of dumping committed by Chilean mineral producers with respect to their competitors in import markets.

One final matter that should be noted in this area is that in November 2000, an agreement denominated the "Framework Agreement for Clean Production in the Large Mining Sector" was signed by the principal Chilean governmental ministries with jurisdiction over economic activities and the environment, and the Chilean Mining Council, a trade association composed of 16 large mining companies. These companies represent approximately 95% of the national production of copper, gold, and silver, and are important players in the international mineral markets.

The objective of this agreement is to promote the productivity and competitivity of the sector, as well as pollution-prevention and clean production practices, at both the national and international level. Among the principles recognised in this agreement are the principle of public-private co-operation; graduality; pollution prevention, based on the premise that the reparation of environmental damages once they are produced is more costly and less effective than preventing them; liability of producers for their wastes and emissions; use of the best applicable technology; and transparency of goods and services markets. The agreement also establishes a technical committee, charged with preparing a work plan, which will be a consensus-based public-private document aimed at developing joint proposals regarding the risks associated with acid-polluted water, closure and abandonment of mining sites, efficient use of energy and water, and liquid and solid waste.

The Agreement is *sui generis* in Chile and responds to concerns of private mining companies regarding their environmental conduct *vis-à-vis* their productive processes. In effect, the Agreement does not attempt to modify Chilean environmental laws, but rather seeks to establish higher and more uniform standards among private mining companies operating in Chile. The text strongly reflects the concern that such companies have about the international market's perception of their environmental policies, and it is a clear example of the influence of international trade on Chilean environment standards in the mining sector.

Other voluntary measures taken by private-sector mining companies in Chile to protect the environment can be perceived clearly in areas not subject to legislation. These include agreements to conserve historical, cultural and similar locations, such as cemeteries, by implementing measures to protect them from mining sites in areas that are not under official governmental protection. Also, companies have engaged in ongoing monitoring of water quality subsequent to the closure of mining sites, even when not required by Chilean law, as well as scientific studies in order to transplant affected vegetation, such as in wetland areas in northern Chile. Companies have also conducted environmental inventories of protected species that could be affected by mining projects, which is not legally required. Finally, in some cases companies have voluntarily complied with regulations under consideration prior to their entry into force, such as in the aforementioned case of closure and abandonment plans for mining sites.

In sum, it may be argued that the measures adopted by private mining operations in Chile demonstrate a high degree of concern for the environmental damage associated with their activities. Executives responsible for environmental matters maintain close scrutiny over this area because they are required to provide information periodically to their parent companies and respond to shareholder concerns. This system, although it is indirect and could be greatly improved, constitutes a relevant horizontal influence mechanism for environmental protection.

Environmental issues in the salmon industry

In the 1990s, a virtual explosion occurred in the production of salmon and trout species in the "salmon belt," an area approximately 1,700 km. long in southern Chile that is characterised by deep rivers and numerous islands, fjords, and bays, largely pollution-free. These conditions have permitted the growth of a cultivation industry for such fish species. In short, this is a relatively new non-traditional industry in Chile, which has experienced unprecedented growth rates in terms of production and exports. A large percentage of salmon producers are Chilean affiliates of foreign companies.

The legal regime applicable to the salmon industry in Chile requires salmon companies to obtain the following authorisations in order to conduct their activities: (i) an aquaculture concession or authorisation granted by the Chilean maritime authority pursuant to the Fishing Law; (ii) a cultivation authorisation, which is granted by the Chilean fishing authority; (iii) companies conducting aquaculture activities in fresh water must hold water usage rights, granted by the General Water Authority; and (iv) sanitary permits allowing the discharge of liquid and solid waste into waterways.

Unfortunately, a number of problems exist regarding this industry and its effect on the environment. One issue is that, notwithstanding these regulations, there is a lack of clarity with respect to the enforcement powers of the corresponding oversight authorities. This situation is due to the fact that more than one authority has the legal power to enforce regulations regarding water pollution. This overlapping of authorities results, many times, in a paralysing effect for all such authorities due to each one's conviction that another will act regarding a given situation. It should be noted, for example, that the Superintendency of Sanitary Services, which is the authority with the most oversight powers with respect to the pollution of waterways, has four inspectors for approximately 2,000 Km. of waterways in southern Chile, where the epicentre of salmon production is located. Any increase in the number of inspectors, however, must be authorised through legislation, and the political consensus has not existed in Congress for such purpose.

An additional problem related to salmon production in Chile is that in recent years concessions have been granted for fresh water sources, such as lakes and rivers, for the purpose of salmon production activities. However, many of the water sources where they are conducted have historically been used for recreational, tourism, and scientific activities, which may no longer be conducted in such areas due to salmon-related contamination.

Also, a series of issues have arisen regarding the efficiency and environmental sustainability of the Chilean salmon industry. With respect to the product's internal qualities, concerns exist regarding the use of antibiotics and growth hormones, about which almost no official information exists in Chile, unlike the situation in other salmon export markets, such as Norway. Regarding external risks, one particular concern is salmon production's effect on marine biodiversity, considering the fact that this industry has introduced exotic species into Chilean water sources, even though these products have not been approved for such introduction elsewhere, like the United States. In addition, only 12% of salmon producers treat the liquid waste produced by their operations, and the rest is simply discharged into rivers, lakes, and the ocean. Another problem is the high demand for other fish species used as salmon feed, which has resulted in overfishing of species such as tuna. Finally, it has been argued that there has been a lack of transpar-

ency and public participation in the environmental impact assessments that have been conducted with respect to aquaculture concessions.

Horizontal influence in this area is seen in the fact that many of these environmental problems have been noted by international environmental groups, who, together with Chilean environmentalists, are conducting a campaign of close scrutiny of Chilean salmon producers' environmental conduct. In addition, the possibility exists that these groups' criticisms could be used by international competitors in the salmon industry, which are principally located in Norway and Alaska, as grounds for "environmental dumping" allegations.

In this sense, the horizontal influence in favour of greater environmental protection by the salmon industry is extremely important in this area, especially considering the fact that Chile—a small country—has had to face great challenges in order to open import markets for its salmon products during the last ten years. As such, it is recognised that a key challenge pending in this area is the internalisation of import markets' preferences and requirements.

Responses to these horizontal influences may be found both in the public sector as well as in private industry. At the governmental level, the Environmental Law requires projects involving intensive exploitation, cultivation, or processing plants for hydrobiological resources to be submitted for environmental impact assessment. However, aquaculture concessions not meeting this standard need not be submitted *per se* to the EIAS, which has resulted in the lack of a holistically-focused approach to environmental evaluation in this area. For example, there is no legal limit with respect to the maximum number of aquaculture concessions that may be granted for a stretch of coast, lakefront, or riverfront. As a result, in theory—and increasingly so in practice—available water resources are being exhausted.

In response to the aforementioned criticisms, the Chilean salmon industry has recently adopted a policy of greater transparency toward local communities, carrying out activities with the tourism industry, which represents another important source of income in southern Chile. The salmon industry has also emphasised the employment that it produces, both directly and indirectly, and its other beneficial effects on related commercial activities, such as transportation, fish feed production, and construction. Finally, the salmon industry has sponsored various educational and cultural events for local communities.

Another response by Chilean salmon producers is that they have funded a number of academic studies by Chilean universities and foundations analysing the sustainability of the salmon industry. These studies have highlighted the economic benefits of this activity through the creation of employment, increased levels of tax income for the government, and its contribution to the national economy. These studies have also argued that the industry has improved the quality of life in local communities, with greater access to better goods, communications, education, roads, health care, and social services. These studies have also defended the pro-environmental conduct of the salmon industry. On one hand, they recognise the water pollution that it causes, but they, not just the salmon industry, indicate that this has been a side effect of many other productive activities carried out in Chile. With respect to mitigation measures for environmental damage required by the authorities, particularly the requirement of insurance coverage against environmental damage has not had positive effects anywhere in the world, not even in Europe where "green" movements and political parties are relatively more influential than in Chile. Finally, these studies have sustained that some environmental movements that are opposed to the salmon industry's environmental conduct are being funded by opposing economic interests, such as the aforementioned international competitors ("Salmonoticias," publication of the Chilean Association of Salmon and Trout Producers, A.G. (web page: www.salmonchile.cl).

A final, and perhaps the most concrete, example of horizontal influence in this area can be seen from the fact that a number of Chilean producers are planning to begin producing and commercialising organic salmon (Salmonoticias, January 2001). This is a product gaining favour with foreign consumers in part due to concerns about the environmental impact of conventionally-produced salmon, and it is evident that the Chilean salmon industry is responding to these consumers' preferences.

Environmental issues in the fruit export market

Under Chile's pro-export and pro-free market policies of the last 20 years, the cultivation of fruit for export has expanded tremendously, particularly to countries in the Northern Hemisphere, which benefit from being able to import Chile's summer crops during the Northern Hemisphere winter. The environmental issues associated with this activity are many, with one of the primary concerns being the increased use of pesticides and other chemicals products. Due to the increase in Chilean fruit exports, particularly to Europe, the use of agricultural chemicals, including pesticides, has tripled since 1984.

In terms of legal regulations, the Ministry of Agriculture is the authority with jurisdiction to regulate the production, importation, distribution, sale, and use of agricultural pesticides. This authority draws its regulations for pesticide registration on the guidelines of the International Food and Agriculture Organisation. This is a clear example of how the Chilean government has responded to horizontal influences in area, in this case based on rules developed by international organisations. The only pesticides that may be used in agricultural production in Chile are those that have been registered with the ministry. In addition, the Chilean Ministry of Health is responsible for establishing maximum residue limits, or tolerances, for pesticides.

Despite these measures, there are a number of shortcomings in the environmental protections in this area. First, agricultural chemicals are imported into Chile that have been rejected by export markets, and even prohibited internationally. Also, stronger pesticides are being applied, which leads to other plagues and infections, thus requiring the use of even stronger pesticides. In addition, the use of agricultural chemicals leads to soil and water pollution, and leads trace amounts in meat and dairy products. Some studies have also found links between the use of pesticides and birth defects in children born in nearby areas. Finally, environmental impact assessments are not mandatory for activities involving the use of pesticides.

Aside from the limited governmental control that exists with respect to the use of agricultural chemical in fruit production, including the export industry, the principal control of such products is exercised fundamentally by Chilean producers. These, in turn, respond principally to the demands of consumers in import markets countries. It should be noted that, in practice, large supermarket chains are the market actors who communicate consumer preferences to distributors, who in turn transmit these preferences to Chilean exporters.

In the fruit export industry, the principal concern is quality, which is required by the final consumers and also, in some cases, governmental regulations in import markets. The market, therefore, provides a key control mechanism over compliance with environmental requirements in this area. Even when different rules are imposed for different markets, Chilean government regulatory authorities are usually not able to respond to changes in import market consumer preferences as rapidly as these occur. As a result, the private sector must take responsibility in this area for self-imposing the standards required by export market consumers.

In the private sector, the principal guidelines considered by Chilean fruit exporters is the "Codex Alimentarius," which is a conventional international text that describes the residue levels permitted for each fruit in each import market. In addition, Chilean exporters have created the "Pesticide Schedule," an expansive guide on pesticide use that reflects the requirements of each import market that is updated every two months. Strict compliance therewith is supervised by both technical personnel employed by exporters as well as receiving personnel of importers. (Interview with Marcelo Galdames, agricultural chemical expert employed by the Chilean Fruit Exporters Association, who is responsible for fruit exports to the European Union). Compliance with these texts shows the effect of horizontal influences, in this case of Chilean private sector actors.

Another example of producer self-regulation can be seen in the response to government regulations in Europe regarding the use or presence of certain chemicals with respect to certain products. The attitude of Chilean producers has been to comply with these regulations and react quickly when face with new requirements, including by establishing industry controls in order to ensure effective compliance. Also, the Chilean Fruit Exporters Association works with fruit producers in order to monitor pesticide levels when unusual growing conditions occur, using private laboratories. Some Chilean fruit producers have obtained international certification, such as the Chilean affiliate of Dole Food Company, Inc, the multinational fruit producer. (Terram Publications, Public Policy Analysis No 2, 6). Finally, Chilean producers have begun to produce organic fruits and vegetables in response to growing international consumer demand for produce grown without the use of chemicals. Organic products currently represent 10% of all Chilean fruit exported to Europe, and in the opinion of many experts, organic production represents a more attractive option than industrial fruit production in terms of future growth.

Although Chilean fruit producers have shown a good deal of responsiveness to export market requirements, particularly in the area of environmental requirements regarding pesticides, a number of measures remain to be adopted in this area. These include the development of plans and techniques for the substitution and reduction of agricultural chemicals that are currently used, as well as approval of a national system for certifying plaguicides, which should provide an accurate description of the origin, contents, and environmental consequences of such prod-

ucts. CONAMA should also establish environmental quality regulations applicable to this sector. Finally, stricter rules are required regarding labelling of products intended for use on food crops, particularly items produced for export.

Conclusion

The research conducted for this article revealed that horizontal influences have so far shown more potential, rather than effectiveness, with respect to improvement of environmental protection practices by the mining, salmon production, and fruit export sectors in Chile. This does not mean that horizontal influences do not exist in these areas, but rather that there potential has not been fully realised.

Notwithstanding, horizontal influences asserted by international trade actors for the application and improvement of environmental protection regulations and practices in the Chilean export markets have had a number of positive results. These include the application in Chile of rules in force in foreign investor home countries when faced with a lack of Chilean regulation on a given issue as well as the incorporation of environmental damage clauses in contracts between foreign commercial actors and Chilean producers or service providers. Also, foreign companies have written "best environmental practices" policies for Chilean executives responsible for operations in Chile, and some of these companies have given their employees instructions regarding environmental conduct, even when not required by Chilean law. Foreign companies have also obtained insurance coverage for environmental damage in Chile. Some of them have conducted voluntary environmental audits that they have provided to the authorities and have submitted voluntarily to the EIAS even when not required by the Environmental Law, such as for projects commenced prior to 1993, when the law entered into force. Finally, Chilean producers are increasingly turning to organic products, in response to demand among export market consumers for more environmentally-friendly products.

Another advance, due on large part to horizontal influences, was the promulgation in 2000 of a law authorising the government of Chile to accredit organisations that certify exported products. As a result, the System for the Official Certification of Conformity of Exports ("SCOCE") was created. At the present time a contract for the administration of the SCOCE is subject to a public bidding process after which it will commence operations. This national system was created in response to concerns raised by exporters of Chilean products, faced with requirements imposed on them by the international market with respect to product certification, especially related to environmental matters.

However, there is a need for additional governmental action with respect to the environment, particularly in response to horizontal influences. One example would be to establish a system of "ecolabelling." This system provides a relatively non-intrusive method of environmental regulation, is fully compatible with international commercial regulations, and is a mechanism that responds to market demands. An important example in this area is the EU Commission Decision of September 15, 1993, on a standard contract covering the terms of use of the European Community's eco-label. (93/517/EEC).

As a final comment, the role of the nation-state continues to be essential especially in the area of environmental protection. However, in a world of open markets and free competition, the Chilean government, in this context, should act more and more in response to consumer preferences and other horizontal influences presented by the globalised economy in terms of environmental protections. This role would comprehend a responsibility to ensure that full information about environmental issues related to Chilean products is provided to consumers and other international trade actors, and to subsequently take into account the preferences and requirements of such groups when considering the promulgation of new environmental laws and regulations. In sum, this new role will imply leaving behind the Chilean government's traditional role as a regulator that has been relatively disconnected from the opinions and preferences expressed by non-governmental entities.

Multilateral Development Banks and Sustainable Development: The Strategy of Depoliticisation

*by Morten Bøås**

The idea of sustainable development has survived more than a decade of academic criticism and rhetorical excess. The definition of sustainable development as "development that meets the need of the present generation without compromising the ability of future generations to meet their own needs" of the Brundtland Report from the World Commission on Environment and Development has set a standard and become one of the major point of reference for debates on environment and development. Inherent in this definition is the concept of social equity, not solely between generations, but also within each generation. The Brundtland Report's definition of sustainable development therefore has consequences for distribution along dimensions: global—within and between generations; and national—within and between generations (see Lafferty and Langhelle 1998). The idea of sustainable development is therefore potentially highly political, and this may explain why the idea is not much discussed in multilateral development banks (MDBs). Apart from paying lip-service to the Brundtland Report and its definition of sustainable development these institutions seemingly prefer to talk about environment, and not about sustainable development.

This article is therefore an attempt to understand what happened to the idea of sustainable development when it was introduced to the MDBs. More precisely, this article rests on the assumption that what can be defined as an economic and technocratic nexus in the MDBs is important for our understanding of the relationship between the idea of sustainable development and the practice of these institutions. This article therefore explores what we may call an economic and technocratic process of depoliticisation. All multilateral institutions are of necessity technocratic. Thus, in order for an idea such as sustainable development to be adopted into such organisations, the idea (e.g. sustainable development) must have the ability to be translated into terms that can be operationalised by the MDBs. This I suggest (together with the importance of achieving consensus), tends to create a process of "depoliticisation."

It is the central tenet of this article that ideas such as sustainable development that potentially challenge the conventional wisdom of MDBs will become distorted as a result of a series of related pressures, which may be—but are not—necessarily linked to the hegemonic position of neoliberalism and to the material interests of the most powerful countries within the multilateral system. Multilateral institutions are consensual and technocratic, and new ideas are diluted and distorted in the process of gaining broad acceptance for them, and putting them into operation. It is here that the issue of knowledge and the assumed political neutrality of a certain type of economics enters the picture, because the legitimacy of the World Bank and the other MDBs [i.e. the regional development banks] to varying degrees rests on the assumption that their development advice reflects the best possible technical research, a justification readily cited by borrowing governments.[255]

This suggests that the production of knowledge in MDBs takes place within a frame of reference that embeds certain cognitive interests, meaning that knowledge becomes an instrument, a tool, for the identification of manipulable variables. Economics is therefore presented by the MDBs as an objective, value-free scientific discourse. The laws of economics, it is argued, are universal, and it is the task of economic research to discover these laws. In what follows, this article will seek to substantiate these interpretations of MDBs by looking at the process in which they adopted the idea of sustainable development.

Sustainable development and multilateral development banks

Sustainable development is without much doubt potentially a highly political concept. However, when first introduced to the MDBs it was defined in a functional manner and described in a highly technical language (if defined and elaborated on at all). For instance, in the first substantial publications by the Asian Development Bank (ADB) concerned with is environmental policies, it was argued that:

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[255] See for instance the statements by the Argentine government in response to IMF's verdict on Argentina's financial crisis in August 2001, Financial Times, 9 August 2001, 8.

> The translation of the word *sustainable development* into reality is the essence of the work of the Asian Development Bank (ADB). Since its foundation in 1966, the Bank's mission has been to improve the quality of life of the people of the Asia and Pacific region (ADB 1994, 17).

No attempt was made to define or operationalise the ADB's approach to sustainable development. Instead, the Bank's operation was presented as an incarnation of the idea of sustainable development. In other major development banks we come across related statements. In the World Bank's so-called milestone publication on development and the environment (see World Bank 1992), there is apart from some token references to the World Commission on Environment and Development in the President's foreword only a brief discussion of sustainable development in one of the many boxes in this report. It is in this box that the process of depoliticisation apparently takes place.

> Basing development and environmental policies on a comparison of benefits and costs and on careful macroeconomic analysis will strengthen environmental protection and lead to rising and sustainable levels of welfare. When this Report used "sustainable development" and "environmentally responsible behaviour," it refers to this narrow definition (World Bank 1992, 8, box 2).

The rest of the publication is almost completely devoted to a technical discussion about the relationship between development and environment. The differences between the statements above and the definition from the Brundtland Commission—meeting the needs of the present generation without compromising the needs of future generations—are huge in themselves, but as we already have seen these differences also have larger political ramifications. As McNeill (2000) argues, at the heart of the issue of sustainable development lies a discussion of rights: the rights of the poor in the present generation as against those of the rich; the rights of non-humans as against humans; and the rights of future generations as against present generations. Inherent in these nexuses, are difficult political questions, each of them potentially very disturbing for the technical approach to development favoured by the MDBs. The Brundtland Report was highly successful as an agenda-setting exercise (McNeill 2000, 22), but apart from empty rhetoric its direct impact on MDB policy and practice has not been very high.

Sustainable development was therefore drained of political content and reduced to "environment." This was mainly due to the potentially disturbing effects this idea could have for the whole notion of development in the MDBs. Within these institutions development is most often seen as a linear process towards increased prosperity and closer resemblance to Western societies, facilitated through improvements in the fields of transport, communication and infrastructure, agriculture and industrialisation.

> Sustainable development as defined by for instance the Brundtland Commission was not a part of the original problem definition of development for the MDBs. In the early 1980s, however, this situation started to change, and the MDBs were suddenly faced with an externally driven demand for a change in their problem definition of development to include sustainable development issues. As a potentially highly political concept, sustainable development could challenge the technical/functional approach to development in the MDBs. As a result, a specific strategy was implicitly and explicitly developed in order to deal with this challenge. This strategy can best be understood in terms of the "politics of depoliticisation." As a governing strategy, depoliticisation "is the process of placing at one removes the political character of decision-making" (Burnham 2001, 127). This technocratic form of governance was not new to the MDBs, but in fact one they had practiced ever since their establishments.

By applying the strategy of "depoliticisation," it was possible for MDB officials to retain, in many instances, arm's length control over crucial economic and social processes, whilst simultaneously benefiting from the distancing effects of depoliticisation. Decisions were not made in the name of an ideology or from the vantage point of specific political interests, but in the name of a greater common good. Ideas and approaches that appeared too political for the MDBs were drained of political content through rhetorical processes cloaked in a technocratic and functional language.

Through deliberate usage of such a strategy, it was possible to keep the whole debate about sustainable development within the technical problem definition that pre-existed the adoption of sustainable development into the MDBs. Initially this strategy was quite successful. However, in the latter part of the 1990s, it became obvious that it would be increasingly difficult to pursue this approach. With the emergence of new cross-cutting issue-areas—governance, involuntary resettlement, and indigenous people—all inextricably linked to the idea of sustainable development, it became ever more apparent that the technocratic consensus on sustainable development established in the 1980s and maintained during the early parts of the 1990s was nothing but a facade that it would be very difficult to sustain. The next step in this exercise is therefore to illustrate the general argument being made with empirical examples, but before turning to that matter, it is necessary to clarify both my approach to MDBs and my position on the issue of change in such institutions.

MDBs as socially constructed arenas for the facilitation of international order

It is important to keep in mind that whether we are talking about MDBs as international organisations, international institutions or international regimes, we are also talking about social institutions. As social institutions, MDBs possess a clear coercive quality. The member states and other actors in the institution are expected to perform certain roles, and the costs to actors who opt out of participation are both uncertain and possibly very high. All international organisations are originally established in order to solve some sort of problem(s). After the completion of the reconstruction of Europe, the MDBs *raison d' être* was the problem of development (or the lack of it). President Truman's inauguration speech on 20 January 1949 is commonly held to mark the beginning of the modern development practice (Nustad 2002). In this speech, scientific and expert knowledge was packaged as the solution to poverty and misery.

> We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. More than half of the people of the world are living in conditions approaching misery. Their food is inadequate, they are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and more prosperous areas. For the first time in history, humanity possesses the knowledge and the skill to relieve the suffering of these people (...) our imponderable resources in the technical knowledge are constantly growing and are inexhaustible (...) The old imperialism—exploitation for foreign profit—has no place in our plans (...) Greater productivity is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge (quoted in Porter 1995, 66-76).

The means designed to take care of these problems was therefore the two main tools of modernisation, namely scientific and technical knowledge. The objective was increased prosperity and closer resemblance to Western societies. Sustainable development was not a part of this original problem definition, but in the early 1980s this situation started to change as the MDBs were faced with an external demand from donor countries and NGOs to include environmental issues in their problem definition.

What was altered, however, were the means and not the ends. The change that did take place was therefore incremental, without any attempt at placing purposes in a new logical order. The process of change which took place in the MDBs is therefore quite similar to the kind of processes that Ernst Haas has given the term "change by adaptation" (see Haas 1990). Nevertheless, in order to understand this process, it is also important to keep in mind that MDBs are intergovernmental organisations dominated by political groups (i.e. country constituencies) whose behaviour is subject to bounded rationality because these groups must balance between objectives, means and interests which are not necessarily coherent. This means that in comparison to other social units, an MDB confronts certain specific challenges when faced with demands to incorporate new issue-areas such as sustainable development. The mission of a MDB is never simple and straightforward because both member states and other actors in their external environment may disagree on the interpretation of the mission as well as on the tasks that need to be conducted if the mission is to be completed. As a consequence, MDBs will favour one particular way of arranging and routinising their activities. The reason for this is that in social units that function under such circumstances as those described here, organisational routines and standard operating procedures will be preferred to demands for change.

The politics of depoliticisation

The World Bank and the regional development banks have long been accused of "bankrolling disasters"—funding economically questionable projects with very high social and environmental costs (see Fox and Brown 2000a; Bøås 2001a; Wade 2002). Nonetheless, as early as at the UN Conference on the Human Environment in Stockholm in 1972, the MDBs declared their environmental credentials. Since the late 1980s, the presidents of these institutions have admitted past mistakes, but also argued forcefully that their institutions were in the process of becoming either the region or the world's leading force for sustainable development. However, many critics still argue that the "greening" of the MDBs is just a façade, a rhetorical process of lip-service carried out in order to pacify donor country governments and thereby keep the resource-flow intact. In the view of the many critics of the MDBs (both the more institutionalised NGO variant and the mass protests around Annual Meeting), the green image of the MDBs is little more than a facade because projects on the ground have not changed very much. The technocratic developmental model of the World Bank and other MDBs not only favours the rich it is claimed, but also blocks more equitable and environmentally sustainable development alternatives. Whereas critics of the World Bank argue that damage control is a much more common outcome than positive sustainable development (Fox and Brown 2000b), defenders of the World Bank argue that not only has the Bank signifi-

cantly improved its environmental record, they also claim that many of the environmental problems are not caused by the World Bank itself, but by the borrowing government that carry them out.

The objective of this article is not to try to evaluate this debate. What is of importance for our purpose is the fact that what began in the early 1980s as increased international awareness over logging of rain forests, road building and dam constructions was transformed in the late 1990s into a much broader debate about how to hold the MDBs accountable to civil societies both in donor and recipient countries.

The issue of the environment was first introduced to the MDBs in the late 1970s/early 1980s. The approach adopted by these institutions was that MDB lending should continue to be concentrated to traditional sectors, but projects should be modified by the inclusion of environmental components or of regulatory safeguards to ensure that environmental damage was avoided as much a possible. Their approach to the environment was therefore clearly of a problem-solving character, and when put down in policy papers it was written in a technical language that staff, management and the boards were used to.

When the issue of the environment first surfaced in the MDBs, it created a clear-cut division between donor and recipient countries. Several Executive Directors (EDs) from developing countries expressed fear that environmental issues would become a new "religion" that could create diversion, in terms of greater costs and difficulties in their nations' path to development and progress. Most donor country EDs welcomed the inclusion of environmental issues. However, some warned that the MDBs, as in so many other cases, could not go faster than their client countries would permit them to go. The challenge was therefore how to encourage borrowing countries to pay more attention to the environmental consequences of projects. An often heard argument was that the MDBs had an educative as well as financial role to play. This is an interesting argument because it highlights the main dilemma for the MDBs within this field. In order for a MDB to play a significant role within field of sustainable development, it would, at least to some extent, have to interfere in the domestic policy choices of its developing member countries. This is however, as we have already mentioned against the charters of these institutions. The outcome was a turn to the politics of depoliticisation. The important thing to notice is therefore that the kind of depoliticisation of the sustainable development agenda that took place in the MDBs, was not a "strategy by default," but part of a deliberate strategy. It is along these lines that we should interpret the history of sustainable development in the MDBs.

Another noteworthy dimension in this process is the discrepancy between the environment/sustainable development agenda defined and the modest operation and institutional implications anticipated by the MDBs. The main reason for this was the donor—recipient country cleavage that emerged. The borrowing countries feared that too much emphasis on sustainable development would divert attention and resources away from the kind of projects that the MDBs traditionally financed. It was therefore of vital importance to convince the recipient countries that a trade-off between traditional MDB projects and sustainable development issues was less costly than they envisioned. It would be business as usual in the MDBs, but it would be more environmentally friendly.

This sort of consensus-building was one way that the politics of depoliticisation were conducted. Another way of keeping politics at bay was to define the sustainable development agenda in a highly technical environmental agenda. The words of the Canadian ED in the ADB are an apt illustration of this process.

> This issue could be approached in a technical manner, and as a technocratic institution the Bank found this quite easy to work on. It will be much harder for the Bank to approach the other cross-cutting issues, which demands another approach.[256]

What we have to keep in mind is that prior to the introduction of the sustainable development agenda and other cross-cutting agendas during the 1980s and 1990s, the MDBs were more or less completely technical institutions. They were development banks, which were managed by staff educated within business, economics and engineering. Their perception of their role in developmental processes was that of the engineer. Development (or the lack of it) was seen as a technical issue, and not as a political question. Thus, if sustainable development could be defined as a technical environmental issue, it increased the possibility of getting the issue approved both among staff, particularly in project departments and by borrowing country governments. A limited re-examination of purpose was therefore possible because sustainable development was presented to the MDBs in the same technocratic language as the old and familiar knowledge. By applying such a strategy of depoliticisation, one managed to keep the discussion on sustainable development within the framework of already existing standard operating procedures. It was therefore possible to treat a potentially highly political idea as a

[256] Interview with Julian Payne, Executive Director of the Canadian-Nordic-Dutch country constituency in the ADB, Manila, 11.11.96.

technical issue, and thereby, the underlying political conflicts could, at least partly, be controlled. In the 1980s and the early 1990s, this strategy worked remarkably well. However, when it became more and more evident that the sustainable development agenda could no longer be tackled by narrow end-of-pipe approaches, the MDBs started to experience more severe difficulties. It was no longer just a matter of finding the right technical solution to a functional problem. In the post-Rio *zeitgeist*, it was more a matter of constructing some sort of consensus around an increasingly politicised agenda.

The experience from the ADB's annual meeting in 1993 is illustrative of the kind of processes that started to take place in the MDBs. At this meeting, ADB staff argued that the decrease in the Bank's long-run success rate of all evaluated projects from 67% in 1988 to 60% in 1992 was not due to poor management by the ADB, but a reflection of the fact that the ADB had to conduct increasingly complex projects. The ADB argued that the projects evaluated included too many projects oriented towards sustainable development rather than the solid traditional infrastructure projects which the borrowing countries preferred and where success was much more easily achieved (Bøås 2001b).

The lessons we can draw from this brief illustration is that also in the 1990s, the MDBs tried to cloud difficult political questions in a technical language. However, the whole *zeitgeist* of the 1990s proved to be of a different nature than the one that had prevailed in the 1980s. It was no longer just a matter of finding the right technical solution to a functional problem. That message had lost credibility. The "honey-moon" days of keeping politics at bay were over in the MDBs. During the 1990s, their agendas became increasingly political (and complex). The problem is that the MDBs are not very well equipped to deal with this new agenda. When the sustainable development agenda no longer could be dealt with by narrow end-of-pipe approaches the MDBs found themselves to be in a state of confusion because they were squeezed in-between donors who called for what seemed like a never-ending line of reforms and new policies, and borrowing member countries (in particular huge borrowers like China and India) who vocally opposed the new direction that the donors wanted the MDBs to take.

The MDBs therefore find themselves in a situation where what they used to be best at doing (and what borrowing country governments mostly ask for) has suddenly become the hardest projects for them to conduct. In order to be able to continue to work on such projects, the MDBs had to put in place new policies that could be linked to sustainable development and thereby act as a shield against complaints and accusations from NGOs. By putting in place new policies the MDBs had an answer ready when various donor countries were forced by their respective NGOs to make inquiries into Bank policies and practices. One problem for the MDBs is that in the eyes of important borrowing member countries such as China and India these developments are seen as proofs of an unwanted transformation process. This means that the controversies caused by the (albeit limited) re-examination of the MDBs' purpose will have to continue because it is impossible for the MDBs to please such a diverse set of competing interests simultaneously. This is exactly the situation the MDBs have to live with. Without continued transformation, their resource flow will be reduced, but the more the MDBs transform themselves towards broad-based development institutions, the more political challenges they will be confronted with.

There is little doubt that the incorporation of sustainable development into the MDBs was facilitated by the deliberate technocratic position taken. By depoliticising the sustainable development agenda it was possible to achieve a narrow re-examination of purpose within the established framework of knowledge. This approach made it easier to conduct an initial adaptation of sustainable development. However, as the discussion also has revealed this should have been only the first stage of a much broader process in which deliberate preparedness to deal with the political dimension of sustainable development should have been expressed with vigour. The main problem with the sustainable development process in the MDBs is that the political dimension was suppressed for such a long time. The technical claims made by the World Bank in the World Development Report on Development and Environment were re-iterated across the system of multilateral institutions to such a large degree that it seems as if these institutions started to believe their own rhetoric (see World Bank 1992). This systemic process of depoliticisation drained the idea of sustainable development of most of its political content, and left the MDBs with a technical environmental agenda that they could operationalise without having to re-examine their original problem definition of development. In the long run however, the turn to the politics of depoliticisation made the MDBs ill-equipped to deal with the political dimension of sustainable development when it emerged in full in the latter part of the 1990s.

Conclusion: the limits of technocratic consensus

Most MDB statements and policy papers still argue that MDB lending should continue to be concentrated in traditional sectors. However, projects should be modified by the inclusion of environmental components or of regulatory safeguards in order to ensure that environmental damage is avoided as much as possible. The approach of the MDBs is therefore still clearly of an engineering problem-solving type, with statements and policy papers written in the technical language that MDB staff, management and Boards are used to.

The important thing to take notice of is, however, that the process of depoliticisation of the political content of the concept of sustainable development which took place in the MDBs was not a strategy by default, but part of a deliberate strategy. What we have to keep in mind is that prior to the 1980s the MDBs were "left in peace" as technical institutions. They were development banks directed by staff educated within a mind-set of business, economics and engineering. Development (or the lack of it) was seen as a technical question, and not a political one. In other words, if sustainable development was defined as environment in a technical manner, and not in a political one, it was possible to incorporate sustainable development into the existing problem definition of development in the MDBs. A real re-examination of purpose was therefore not necessary because the new "knowledge"—sustainable development—was founded on was presented to the MDBs in the same technocratic language as the old and familiar knowledge. This entailed that it was possible to keep the discussion on environment (i.e. sustainable development) within the framework of the standard operating procedures of the MDBs.

However, as we seemingly have moved beyond the initial consensus of Rio, the *zeitgeist* has changed. Related to these broader changes, we find a whole range of new cross-cutting themes (governance, involuntary resettlement, indigenous people *etc.*). It is therefore today obvious that the technocratic consensus on environment (i.e. sustainable development) has reached its limits. It is no longer possible to define sustainable development solely in a technical and functional manner. The consequence has been that the internal consensus disappeared, not only between donor and borrowing member countries, but also internally in MDBs. With an increasingly more political agenda, the MDBs policy-making procedures have started to take the appearance of exogenous streams flowing through their internal policy-making system, linked by their arrival and departure times and the structural constraints of the access of problems, solutions and decision-makers to choice opportunities. This will make the process of political manoeuvring between donor and recipient countries and other stakeholders (civil societies and the private sectors) increasingly more difficult for the MDBs.

My final comment, however, is that what we can learn from this is that for an idea to be of importance to an MDB in the first place that idea cannot be in complete contradiction to the hegemonic knowledge system and the collective identity formed around this knowledge system. In fact, an important insight to be gained from this discussion is that for an idea to make an impact in MDBs it must be possible to adapt or distort that idea in accordance with the dominant knowledge system, the collective institutional identity formed around this knowledge system and the broader power relationships in the world political economy that sustain them.

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Scale Conflict and Sectoral Crisis: The Fisheries Development Dilemma

*by Frank Alcock**

The mutual recognition of 200-mile exclusive economic zones (EEZs) brought with it expectations of increased industrial efficiency and enhanced sustainability for global fisheries (Eckert 1972; Royce 1987). Neither expectation has been realised. Fleet sizes, measured in gross tonnage, have increased at a far greater rate than landings under an oceans enclosure regime while the number of regions designated as overfished or depleted has continued to rise (FAO, 2000). There is little evidence to suggest that extended EEZs have improved the efficiency or the sustainability of fisheries production within their boundaries.

There is no shortage of partial explanations for the chronically poor performance of EEZs (Hoel 2000). Natural science explanations focus on the inability to anticipate complex ecosystem dynamics; economic explanations focus on incomplete property rights and the persistence of open access regimes; sociological and anthropological explanations focus on social roles, cultural norms and class conflicts. Each of these framings illuminates important dimensions of fisheries problems, though each, considered independently, generates anomalies. This article draws on different elements of these framings in order to illuminate the political fault lines of a fisheries dilemma that has afflicted most coastal states in the wake of the oceans enclosure movement.

EEZs were extended during a period of rapid technological change and the easing of world-wide trade and investment barriers. This confluence of factors gave rise to the perception of significant development opportunities in coastal fisheries; opportunities best realised through industrial expansion, modernisation and re-orientation toward export markets. Where adopted, such measures have had destructive impacts on small-scale fishing communities and their historical institutional arrangements. These smaller-scale fishing communities hold different ideas regarding how domestic fisheries should be managed and the degree to which they should be integrated into the broader global economy. Accordingly, this article explores both the global and local dimensions of the political struggle that ensues from these competing interests. The initial section of the article discusses the origins and nature of scale conflict in the fisheries sector of coastal states. The latter sections discuss a variety of domestic factors that shape the outcomes that result.

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Global markets and the origins of the dilemma

Evolution of the industry

The fishing and seafood industry has historically consisted of fishers and merchants. A patron-client relationship known as "the truck system" accurately depicted the structure of most coastal fisheries well into the 20th century (Apostle et al. 1998). The truck system continues to exist in many places, especially in developing countries. Under the truck system merchants provide credit and supplies to individual fishers who sell their fish back to the merchant on a credit-only basis. The merchant then markets the fish, often via export. The relationship heavily favours the merchants, who act as local monopsonists. Fishers are price-takers and often dependent upon a single merchant or dealer for the credit and supplies necessary for annual operation.

Immediately following World War II, fishery technology began to make quantum leaps in terms of its ability to locate, catch, process, freeze, transport, package and distribute fish. In addition to expanding existing markets for fresh and salted seafood, these technological advances allowed for the development of new ones, most notably frozen seafood retailing in American supermarkets. Technological changes allowed for mass production in the areas of harvesting, processing and distribution and with it the opportunity to develop distinct segments or subsectors within the industry.

Large-scale production processes introduced economies of scale characteristics (EOS) across the industry (Royce 1987; Coull 1993). These EOS characteristics appear to become more pronounced the further downstream one progresses, such that processing scale economies appear more salient than harvesting scale economies, and retail scale economies appear more salient than those in either processing or harvesting. In retailing, seafood markets have been known to demonstrate peculiar behaviour with respect to short-term demand inelasticity that impedes price adjustments as a market clearing mechanism. As a result, what is valued in these uncertainty-plagued markets is the ability to deliver a constant supply (Wilson 1980). Large-scale firms are better able to ensure supply, thereby exacting price premiums and further reinforcing the EOS nature of the industry.

While fisheries in many areas of the world are still characterised by traditional fish brokers (merchants) with minimal physical assets, the technological revolution of the 20th century lent itself to the capitalisation of the "middleman" segment of the fishing and seafood industry and the replacement of the merchant class with a capital-intensive processing subsector. In addition, technological change underpinned the steadily increasing globalisation of the industry, lowering transactions costs and increasing flows of commodities and investments across borders (FAO 2000). Complementing the lower physical transactions costs were lower tariff and institutional barriers to international expansion. These trends were mutually reinforcing. As a result, previously differentiated segments of the fishing and seafood industry—in particular, frozen seafood markets—witnessed considerable vertical integration during the latter half of the 20th century. Since the advent of the factory trawler in the 1950s it has been technically feasible for boats to harvest, process and freeze fish at sea, and many large-scale seafood processors have invested in their own fleets. Ownership of harvesting assets is not limited to seafood companies, as some factory trawler fleets and parent seafood companies are in turn subsidiaries of general food distribution conglomerates and investment corporations like Tyson's Foods, Unilever and Aker RGI.

The efficiency of large-scale operations comes with a caveat, however. Access to an adequate pool of resource inputs is a precondition for scale economies to operate. Historically, fish stocks have exhibited considerable fluctuation and uncertainty. In introducing these factors and other externality considerations, some observers have charged that large-scale fishing operations are less efficient than small-scale ones (Fairlie et al. 1995). Small-scale operations have learned to adapt to high levels of uncertainty by maintaining flexibility in terms of targeted species as well as short-term labour options outside of the fishery. Coastal communities have historically had a symbiotic relationship with the small-scale segment of the industry wherein the fishery acts as an employer of last resort while the community provides refuge for local fishers in times of scarcity. Flexibility in absorbing excess labour has historically been a crucial feature of the relationship between coastal communities and their associated fisheries allowing them to remain viable in spite of fluctuating fish stocks.

For nations with substantial coastal fisheries whose potential bounty exceeded existing fishing capacity, EEZ extension attracted both capital and labour into the fishery. Extended EEZs were viewed as an opportunity to develop domestic industries that had considerable growth and earnings potential, including the ability to generate hard currency through exports. Incentives to enter the industry were often sweetened by government loan subsidies and tax credits. In coastal states that lacked the ability to fully exploit this resource endowment the opportunity to obtain revenue through leasing access and establishing joint ventures with distant water fleets remained an attractive option (Queirolo et al. 1997).

Once the fishing industry of a given economy (local, national, global) scales up, maintaining high levels of fishing intensity (or, for processors and retailers, abundant fish supplies) becomes a necessary condition for profitability. The anticipated reprieve for nationalised fish stocks was short-lived and many began showing signs of strain within a few years of EEZ extension. By that time large amounts of labour and capital had often entered the industry resulting in overcapitalised fleets and excess labour. The dilemma thus unfolds: how should the industry reconcile its need for high intensity fishing with the negative externalities encountered when stocks are overfished?

CONFLICTING PREFERENCES FOR DOMESTIC POLICY

While few actors took issue with the initial wave of government support, preferences diverged with respect to which interests to privilege in charting a course for fisheries development. Large-scale firms rely on asset mobility to maintain their economic viability. They can move their processing operations to the fish in the form of factory trawling or bring the fish to their processing facilities via import. Access to large quantities of fish is paramount, though, and the flexibility of large-scale firms is limited. Small-scale fishers rely on labour flexibility to maintain their economic viability. The stochastic nature of fish stocks encourages flexibility in targeting different species subject to price and availability as well as flexibility in moving into short-term employment outside the fishery when fish are scarce. Flexibility is paramount, because mobility is limited. Small-scale fishers can only chase the fish so far. In the midst of a crisis, political questions arise. Should fishing capital be protected, or fishing labour? Should large-scale corporations be privileged, or small-scale communities?

For economists, the favoured tool for reducing capacity and increasing efficiency is individual fishing quotas (IFQs, or ITQs where rights are transferable). IFQs are exclusive rights that can be awarded to individual fishermen or individual vessels, specifying a portion of the total allowable catch for a given species that can be harvested in a given year. Empiri-

cal evidence from existing IFQ programmes demonstrates that these regimes generate substantial rents for quota recipients (Grafton et al. 1996). Theoretically, IFQs should generate incentives for conservation as well, though the empirical evidence regarding their ability to reduce overfishing is mixed (McCay 1995).

Resistance to IFQs usually involves equity considerations, particularly those that concern small-scale fishers and local fishing communities. In addition to the issue of the initial distribution of rights, small-scale fishers fear the long run consequences of consolidating fishing rights in the hands of the large-scale segment of the industry (McCay 1995). IFQs pose an additional threat to the ability of small-scale fishers to maintain access to a diversity of local fisheries and to move in and out of the fishery as circumstances dictate. Small-scale fishers have resisted IFQ schemes, in large part, because they perceive such policies as threats to the flexibility on they rely upon and upon which coastal communities depend. Considerable uncertainty exists with respect to the long run impacts of IFQ regimes on the viability of small-scale operations and local fishing communities.

Large-scale operators tend to support IFQ programmes because of the anticipated rents they will generate and their ability to provide a more predictable flow of resource inputs. Uncertainty may exist with respect to the stability of a given stock or the viability of IFQ holdings in a given place. But this uncertainty is mitigated by the mobility of large-scale operations and their ability to acquire larger holdings of IFQs. In an EOS industry, the profitability of IFQ holdings are likely non-linear. Small IFQ holdings may not be economically viable in the same fishery that large IFQ holdings are profitable. For large corporations, it is also possible to obtain IFQs in multiple fisheries. For multinationals, a global portfolio is possible. This reduces the risk associated with the depletion or failure of any specific fishery. Uncertainty with respect to a broader range of social outcomes in specific places may increase under an IFQ regime, but place-specific resource fluctuations will embody less risk to the large-scale segment of the industry.

CONFLICTING PREFERENCES FOR INTERNATIONAL TRADE AND INVESTMENT POLICY

In the field of international political economy (IPE) a primary research theme is the relationship between domestic structures and international system. Notable in this literature has been a revival of what might best be described as "second-image reversed" arguments which attribute the policy preferences of socio-economic actors—and to some degree the actual policies of states—to conditions in the broader global economy (Gourevitch 1978).

In a couple of the most imaginative versions of these arguments, Jeff Frieden and Ron Rogowski have attempted to employ basic neoclassical trade models in order to deduce the trade policy preferences of different groupings of domestic actors. In their overview article on the link between international trends, Frieden and Rogowski (1995: 29) state, "changes in the international economy can usefully be regarded as changes in relative prices; and changes in relative prices have predictable effects on the policy preferences of socioeconomic actors." With respect to internationalisation, IPE hypotheses derived from the Heckscher-Ohlin model emphasise relative scarcities and/or price differentials among different factors of production. Since international trade in goods and services equalises relative commodity prices, it tends to increase the relative value of abundant factors at the expense of scarce ones. Coalitions are expected to occur within land, labour and capital factors with the potential for alliances to form among them depending upon the relative abundance of each factor.

Heckscher-Ohlin implicitly assumes negligible costs in moving factors from one industry to another. In reality such costs exist and are often prohibitive. IPE hypotheses derived from the Ricardo-Viner model emphasise factor specificity—the cost of moving factors from one industry to another. In a world characterised by specific factors, internationalisation will increase the value of all factors in competitive export sectors while decreasing the value in non-competitive sectors. With respect to trade policy, the Ricardo-Viner expects coalitions to form along sectoral lines and involve multiple factors as opposed to Heckscher-Ohlin, which expects coalitions to form among like factors and across sectors.

A third and often overlooked perspective concerns industries characterised by the above discussion of internal economies of scale (EOS). In EOS sectors, "the sheer scale of a firm's production is crucial to its costs and competitiveness. In such sectors, the opening of world markets increases the advantage of larger over smaller firms, and the advantage grows as access to markets expands (Frieden and Rogowski 1995: 39)." Frieden and Rogowski note the ability of larger firms to redeploy and/or physically relocate assets in order to reap the benefits of larger economies of scale. An EOS perspective expects cleavages with respect to trade policy to occur between large-scale firms with the international savvy to take advantage of opportunities for expansion and those less sophisticated, small-scale firms who are more likely to be

crowded out of the market by larger competitors.

Scale-cleavages appear to be the norm in the fisheries sector, though the small vs. large faultline sometimes coincides with export-oriented vs. domestic consumption segments of the industry. Here, the interests of the nation-state are conflicting. Trade and investment liberalisation allows for specialisation in areas of comparative advantage; increased efficiency through economies of scale; the opportunity to earn hard currency which can service foreign debt; and greater profitability and income for both the sector and the economy as a whole. Conversely, industrial fishing operations targeting export opportunities can reinforce unsustainable harvesting practices and damage coastal ecosystems, divert fishery products away from domestic markets and raise local food prices (Deere 2001). The relationship between fisheries trade and food security has been a particular concern in contemporary environment and development policy debates (FAO 2000).

The nation-state and domestic factors shaping fisheries policy

THE FISHERIES PRODUCTION PROFILE

From a theoretical standpoint, the relationship between actor heterogeneity and co-operation among actors operating in fisheries—or on commons issues more generally—has received considerable scholarly attention (Libecap 1989; Keohane and Ostrom 1995). More detailed analysis in specifying forms and degrees of heterogeneity is less common.

To understand how competing interests are distributed in the fisheries sector of a given nation-state, a production profile of the sector in question is instructive. The basic components of such a profile include the degree of vertical integration, the degree of industrial concentration, fleet structure, and the regional distribution of fishing interests. The ethnic composition of fishing interests can also be a useful indicator in some instances. These measures will often vary across different intrastate domestic fisheries as different species and regional jurisdictions can involve a set of actors and management regimes that are highly independent.

Of the above set of measures, the degree of vertical integration is perhaps the most informative indicator of the relative bias of fisheries policy vis-à-vis the competing interests identified in the initial section of the article. Vertically integrated firms tend to benefit from the reduced uncertainty of input supply that accompanies exclusive access rights and IFQ programmes. These firms are also well positioned to take advantage of international trade and investment opportunities and are likely to support liberalisation initiatives. Harvesting operations that remain independently owned are more apt to retain an adversarial stance toward potential encroachments from processing and/or foreign interests, (i.e. the merchant class and foreign imperialists) thus resisting privatisation schemes and liberalisation initiatives. Domestic sectors with higher degrees of vertical integration should be more inclined to adopt such measures.

Iceland is frequently highlighted as having one of the most progressive fisheries management systems in the world, including widespread adoption of IFQ programmes (or ITQs as most Icelandic quotas are transferable). It should be noted, however, that Iceland's fishing industry was characterised by high degrees of vertical integration prior to its privatisation reforms. The typical firm in the fishing industry is based in a village or town, with a processing facility and one or more fishing vessels owned by the firm. Most of these firms belong to one or more large marketing co-operatives that target export opportunities (Arnason 1995). Iceland's "progressive" policies are in no small way facilitated by a vertically integrated fishing industry that is predisposed to favour IFQ programmes and export enhancement initiatives.

Among other coastal states signalled out for privatising coastal resources, vertical integration often coincides with those segments of the industry that support IFQ or ITQ programmes. Canada's initial experiment with enterprise allocations was negotiated through its large, vertically integrated companies in Newfoundland and Nova Scotia (Blades 1995; Apostle et al. 1998) and the leading proponent of ITQs in the United States is the Seattle-based fleet of factory trawlers that operate in the North Pacific and market their products world-wide. Conversely, regions and countries most resistant to IFQs and trade liberalisation are often characterised by politically vocal harvesting sectors that remain independently owned vis-à-vis processing interests. Examples include a significant portion of the Northern Norwegian fishing fleet, almost all of the New England fishing industry and the small-scale "fixed gear" segments of the Atlantic Canadian fishing industry.

A major problem with using indicators of vertical integration is the notorious difficulty in ascertain ownership structure. This often renders estimates of vertical integration crude. Industrial concentration offers another measure by which to ascertain the balance between large and small-scale fishing interests in a given fishery, region, or nation-state. Given that

small-scale fishers profess fears of industrial concentration as a consequence of IFQ programmes, sectors that a priori exhibit high levels of industrial concentration are less susceptible to concentration concerns as a justification for resistance. With respect to international trade and investment policy, the EOS argument suggests that large-scale firms, possibly revealed by higher levels of industrial concentration, should be correlated with a more favourable orientation toward global markets.

Though high levels of industrial concentration often coincide with vertical integration, divergence between the two measures is possible. Iceland, again, stands out with relatively modest levels of industrial concentration despite considerable vertical integration. Arnason (1995: 30) explains this peculiar structure to a wide distribution of good fishing grounds around the island nation coincident with poor internal communication and transportation infrastructure. As a consequence, "extensive horizontal integration has been difficult while vertical integration has arisen quite naturally."

The most visible manifestation of conflict often occurs among differentiated segments of domestic fleets, usually between large and small vessels and different gear types. The most acute clashes are usually between trawlers and smaller-scale, owner-operated vessels. In most developed countries, these clashes can be observed as political quarrels that occasionally lead to minor acts of property damage. In developing countries, these intra-fleet conflicts become susceptible to more intense levels of violence.

Southeast Asia has been particularly prone to violent confrontations between artisanal fishers and trawling vessels. In Indonesia and Thailand government policies have been abruptly changed in favour of artisanal fishers in order to ward of social uprisings (Torell 1984; Bailey 1997). In the Philippines, local government officials sympathetic to trawler interests have condoned violence as a means of deterring small-scale interests from politically organising despite national policy reforms seeking to encourage such activity (Sunderlin and Goropse 1997). Case studies in McCay and Acheson (1987) illuminate similar clashes in Turkey, Mexico and Brazil.

Accordingly, fleet structure defined in terms of relative proportions of vessel sizes and gear types illuminates the prevailing balance between these interests. In addition to estimates of the numbers of vessels and fishers categorised under different fleet segments, the relative catch proportions accounted for by each segment provides an initial indicator of the raw distribution of fishing interests.

Another useful indicator is the regional distribution of fishing interests, measured in terms of the relative proportion of landings, relative employment proportions and incomes, proximity to fishing grounds, etc., for various regional jurisdictions or port communities. The regional dimension of fisheries conflict is an important factor in fishery policy struggles in most North Atlantic coastal states as concerns run high vis-à-vis the consolidation of fishing rights in communities that harbour the most economically efficient firms or have greater access to capital.

Finally, the ethnic composition of these various slices of fishing interests is often relevant. Competing economic interests are sometimes buttressed by underlying ethnic divisions and their inherent tensions. Ethnic Chinese own a significant portion of the trawling vessels in Malaysia and Indonesia (Bailey 1997). Though Chinese business entrepreneurs are politically well connected, government officials are less concerned with their alienation during crisis situations than with triggering violent uprisings among the majority populations. An underlying motivation in recent South African fisheries reforms was concern over the near exclusivity of white ownership of fishing interests (Hersoug and Holm 2000). Recent court decisions have sought to redistribute access rights and/or allocation of fisheries resources to native populations in Canada, the Pacific Northwest region of the United States and in New Zealand. More subtlety, conflicts among gear types, vessel classes and port communities in New England overlap ethnic tensions between Portuguese, Italian and Norwegian communities.

THE POLITICAL ORGANIZATION OF THE INDUSTRY

While the above indicators serve as useful rough estimates of the raw distribution of competing interests in a given fisheries sector, the political organisation of the industry provides the crucial vehicle for marshalling these interests into political influence.

There are a myriad of ways of combining the converging and conflicting interests depicted in a fisheries production profile as attested to by the considerable variation in organised interest groups that lobby over fisheries policies. In some coastal states the most salient interest groups operate at the national level while in others regional or local groups are more relevant. Organised interest groups exist for boat owners and for crewmembers, for processing and trade organisations, for large and small vessels, for different gear types and regions. Some organisations remain interest-specific while others aggregate com-

binations of interests at different scales; still others serve as an umbrella organisation for articulating the interests of the fishing industry as a whole. Some organisations have long political histories while others arise in response to a specific issue or policy debate and dissolve quickly after its resolution. The composition of these organised interest groups is shaped by both the production profile in a given region as well as the institutional frameworks in which the organisation operates. The relative influence of each organisation is likewise shaped by the institutional framework, but also by the relative power of labour and capital interest groups, political parties, and the connections between each.

To briefly illuminate the rich variation in the political organisation of fishing interests, consider again some of the leading fishing states of the North Atlantic. In New England (and across the US more generally) the most active lobbying groups distinguish between harvesting and processing interests and within the harvesting sector by gear type. These groups also have a narrow regional focus. The situation is similar in Atlantic Canada, though there are distinct differences between Newfoundland and Nova Scotia as the former maintains greater provincial cohesion among its interest groups through an overarching labour union while the latter exhibits more local autonomy across its interest groups and greater variation from county to county. In Iceland, the two most prominent lobbying groups are differentiated by vessel size—the Small Vessel Association and Large Vessel Owners Association. Unlike the regional focus of New England and Canadian interest groups, these competing Icelandic interest groups engage in a bargaining process that targets national policies. National policy is also the focal point of Norwegian fisheries politics, though in contrast to Iceland there is a single "umbrella" organisation, the Norwegian Fishermen's Union, that aggregates a wide variety of competing interests and has until recently maintained an unparalleled position of influence in the establishment of national fisheries policy (Holm 1995).

In contrast to the North Atlantic region where the most influential groups have long histories, many developing countries have witnessed the birth of new interest groups that materialise as a consequence of development policies, becoming relatively powerful in a short period of time. The suite of liberalisation policies adopted by many Latin American countries in the 1980s and early 1990s under the auspices of the "New Economic Model" solicited massive capital inflows into the fisheries sectors of coastal states. Businessmen with little or no previous history in fisheries became quickly aware of their vested interests in industrial scale fishing and supportive export enhancement policies. Organisations were quickly formed to articulate these interests and have since remained effective lobbying vehicles.

Thorpe et al. (2000) and Ibarra et al. (2000) document some of these examples from Latin America. In Mexico, a confederation of local co-operative organisations (ejidos) had since 1949 maintained exclusive access rights to the country's nine most important inshore marine and shellfish fisheries. In 1990, the Co-operative Confederation reluctantly agreed to accept some private participation in these fisheries in return for the promise of much needed investment support. This paved the way for a 1992 fisheries law that abolished the ejidos exclusive access rights, replacing them with a system of permits and concessions. By the mid 1990s these fisheries were dominated by private firms who organised the Chamber of the Fishing Industry and effectively lobbied to further curb the activity of ejidos fishermen.

In another example, 1992 Argentina fisheries law allowed Argentine firms to lease foreign vessels and granted limited access to EU vessels in return for significant reductions in EU tariffs on Argentine fish products. New investment was channelled into the fisheries sector, predominately in the form of large-scale freezer trawlers. In the lucrative hake fishery, efforts to introduce IFQ programmes have been stymied by charges that allocation procedures are unfairly biased in favour of these vessels that had only entered the fishery after 1992. While smaller-scale interests have effectively mobilised to challenge these large-scale interests, organisations representing the interests of the latter quickly materialised and have demonstrated savvy in protecting their new-found wealth.

In addition to a rapid materialisation of new political organisations, policy shifts can forge alliances among interests with longstanding histories of antagonism and mutual opposition. The experience of India in the early to mid 1990s is a case in point. In 1991, as part of a broad liberalisation initiative, the Indian Government introduced a new policy that granted EEZ access to foreign-owned factory trawlers through joint ventures with Indian partners. The joint ventures targeted shrimp and other high-value species for export markets in the US and Japan. Resistance to this culminated widespread strikes in 1994 organised through an unprecedented alliance between a federation of small-scale fishers unions and their traditional enemies—the owners of a fleet of relatively small mechanised trawlers (Kurien 1995). The political pressure brought upon the government through the

joint effort of these strange bedfellows proved effective in reversing the policy.

THE INSTITUTIONAL FRAMEWORK

The third factor that shapes the outcomes of domestic fisheries policies is institutional structure. This includes both the regulatory structure governing fisheries as well as the broader political superstructure that circumscribes fisheries regulation.

One means of characterising regulatory structures is centralised vs. decentralised. A form of decentralisation that has received considerable attention in fisheries management literature is "co-management" (Pinkerton 1989). Co-management depicts the sharing of responsibility and decision-making discretion between government authorities and stakeholders active in the fishery. In addition, there are other forms of decentralised fisheries management that may depart from co-management principles. Some nation-states may devolve responsibility for certain aspects of fisheries management to regional, provincial, state or local levels while retaining tight governmental control with minimal user participation. Decentralisation need not coincide with robust stakeholder participation.

Aside from centralisation vs. decentralisation, the vast number of ways in which fisheries regulatory structures can vary tempers the utility of devising a regulatory structure typology. The primary points to be made are that regulatory structure shapes the content of fisheries policy and it also constrains and/or enables the formation of organised interest groups as well as their influence.

The broader political structure that circumscribes fisheries regulation is as important as the regulatory structure itself—if not more important. Where regulatory regimes are weak, political institutions will likely play a more important role in shaping fisheries policy.

As with regulatory structure, political structure can vary across a number of different dimensions. Centralisation vs. decentralisation again provides insight into how policy outcomes are shaped, though it is helpful to think in terms of federal vs. corporatist structures. In federal systems, authority over domestic policy, including fisheries issues, is often divided across different levels of government as well as among different federal departments. As a result, there are often multiple avenues available to conflicting interest groups to exert influence. In corporatist systems, the policy process tends to be more centralised and consolidated. Those interest groups that have less impact on national policies will often have less recourse in terms of seeking recompense through alternative avenues of influence. Corporatist structures thus tend to force compromises and/or marginalise those interests that cannot be accommodated. Federal structures tend to agglomerate the demands of a wider variety of actors even if the resulting policy outcomes work at cross-purposes. As a result, one might posit that fisheries policies devised within corporatist political structures tend to reflect greater *coherence* than fisheries policies devised within federal structures.

Another look at the North Atlantic countries discussed above illustrates this coherence argument. Iceland, Norway, Atlantic Canada and New England all have a politically vocal, small-scale segment of their fishing industry as well as a competing segment of relatively larger-scale interests (though the nature of what constitutes "large-scale" varies from across each state). While contestation among these competing interests occurs in each case, the policy outputs are arguably much more coherent under the corporatist political structures of Iceland and Norway than they are under the federal structures of Atlantic Canada and New England. This observation holds in spite of the fact that large-scale interests in Iceland have the political "upper-hand" vis-à-vis small-scale interests as opposed to Norway where the reverse is true; and it holds in spite of the fact that large-scale interests in Canada have the political upper-hand as opposed to New England where the reverse is true. There are distinct differences in Icelandic and Norwegian fisheries policies, but each weaves together its respective components in a manner that effectively advances the negotiated objectives in each case. The same cannot be said for the federal cases. In Atlantic Canada, divisions of responsibility between the federal and provincial governments vis-à-vis authorising harvesting vs. processing activity ends up with harvesting and processing policies that undermine one another. In New England, a disparate group of competing interests continuously paralyse policy reforms that are pursued through a decentralised regulatory process with numerous windows of engagement.

For both regulatory regimes and the broader political structures in which they are embedded, another valuable appraisal that can be made concerns the thickness or strength of the institutional framework. Strong institutions can be considered as sets of rules that are not easily changed. When change occurs, it is usually incremental or on the margins of regime in questions. Conversely, weaker institutions can be considered sets of rules that are subject to dislodging or have relatively modest influence on behaviour where operative.

Where stronger institutions prevail, one can expect the general evolution of fisheries policy to unfold gradually, subject to path dependency, self-reinforcing dynamics. Where weaker institutions prevail, fisheries policy changes occur much more rapidly. Self-reinforcing processes may also unfold in weak institutional settings but abrupt policy shifts are also possible. As the concluding section suggests, a common difference between the trajectories of institutional development in developed vs. developing countries stems from the fact that institutions in developing countries are often weaker than they are in developed countries.

Conclusion: The future trajectory of institutional change

As one considers the aforementioned domestic factors, it is wise to resist the temptation of treating them as independent variables. The distribution of interests in a given fisheries sector, the manner in which they organise themselves politically, and the institutional structure that governs their behaviour all affect one another. Clearly, domestic fisheries sectors with significant differences in their production profiles can be expected to show signs of variation in the nature and efficacy of the organisations that represent their interests. Variation in the political organisation of an industry will likewise affect the degree to which organised interest groups can modify regulatory regimes as a means of advancing these interests.

While institutional structures are partial reflections of the preferences and relative influence of the different interest groups they govern, institutional structures in turn shape the formation, evolution, and relative influence of these groups. In fisheries, organisational groups materialise and evolve in a Darwinian fashion. Organisational forms that are effective in a given institutional environment thrive, while those that are ineffective disappear (North 1990). Despite having production profiles that resemble one another, differences between the fragmented array of locally focused fishing interest groups in New England vis-à-vis the overarching national fishermen's union in Norway are in part attributable to institutional structure in which they operate. In the United States, a decentralised fisheries regulatory structure and highly pluralist political superstructure affords specific interests many avenues through which to influence fisheries policy. Small groups focused on narrowly defined interests persist because the institutional structure allows them to be effective. Conversely, Norway's corporatist society almost mandates a degree of national co-ordination among fishermen as a prerequisite for efficacy in shaping fisheries policy. The impact of institutional structure on political organisation is demonstrated more starkly in Norway's processing and export segments of the industry. Until very recently, organisational co-ordination among processing and export interests at the national level was severely impeded by institutional measures that were introduced by small-scale fishermen and labour-friendly political parties in the 1930s (Holm 1995).

Political organisation and political structure also impact the distribution of interests, albeit through policy outcomes that arise through the interaction of the various domestic factors. Small-scale fishers fear that large-scale interest groups and fisheries regimes that marginalise their voices will eventually squeeze them out of the industry through policies that cause a consolidation of access rights and fishing capital in the hands of corporate interests. Large-scale operators might fear the opposite scenario: effective lobbying on the part of small-scale groups and institutional changes that devolve authority to local communities may lead to policies that inhibit access to large quantities of fish that are necessary for large-scale profitability. A domestic architecture of co-management regulatory regimes could conceivably diminish the number of industrial fishing operations in a given production profile in favour of a return to small-scale operations and artisanal fishing communities.

While possible in some instances, such a return to small-scale operations seems unlikely to take root on a global scale. The most powerful forces affecting the raw distribution of fishing interests world-wide are those giving rise to the dilemma in the first place. This includes the profitability (or perceived profitability) of large-scale fishing operations targeting high-value markets in the US, EU and Japan. In developing countries where the allure of export revenue is strong, sweeping policy changes that have immediate impacts on the distribution of fishing interests continue to be observed. Large-scale industrial fishing interests were few and far between in Latin America prior to the oceans enclosure movement. They blossomed as soon as NEM liberalisation policies were put in place and remain a powerful force in shaping the future direction of fisheries policy in Latin American coastal states. Even in the developed countries of the north that are characterised by robust institutional frameworks, strong labour unions and powerful small-scale interest groups, the general trajectory of institutional change continues to inch toward increasing privatisation on the domestic front and increasing liberalisation on the international front.

The specific forms of privatisation and liberalisation that will ultimately be realised in each nation-state has yet to be determined. That nation-states will not likely eschew the income opportunities afforded to it by the global economy in order to appease local communities seems assured. The terms of engagement remain subject to negotiation by domestic societies on a case-by-case basis. The strong influence of corporate profit motives notwithstanding, the sheer numbers of small-scale fishers ensure that they will continue to be an important political force for the foreseeable future, either by virtue of the ballot box, or, in less stable societies, by the spectre of violence.

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Diffusion of Ideas and Policies in a Multi-Level Regulatory Regime: Arctic Institutions and Global Climate Change

*by Jerry McBeath**

This article focuses on the impacts and consequences of global climate change, including its effects on biota and ecosystems in the Arctic. The article—and the broader research project of which it is a part[257]—posits that human institutions are the critical lens through which global climate change is filtered, and from which human responses are created and implemented. The second thesis of this article is that the complex, multi-level environmental regulatory regime of the American Arctic increasingly is subject to the diffusion of ideas and policies from the epistemic community, international non-governmental organisations (NGOs), and multinational corporations (Jorgens, 2001; Haas and McCabe, 2002).

Increasingly, the facts of global climate change seem incontrovertible. Observations from meteorological stations across the far North show increases in annual mean temperatures of up to 1 degree centigrade over the last generation. Observed impacts include: melting of glaciers, shrinking of sea ice extent in the Bering Sea, and thawing of permafrost in Alaska and Siberia (Weller and Anderson, 1998; National Assessments Synthesis Team, 2000; McBeath, 1995).

This growing scientific literature on global climate change leads to the belief that institutions will develop immediate response strategies. However, the expectation that policy arguments should win on their merits is unfounded in the political arena (Hempel, 1993, 219). Indeed, the response of institutions to observed changes attributable to global climate warming has been varied across the Arctic. US governments at the federal level (with the exception of scientific research agencies), and at state and local levels have been slow to respond to the evidence of climate change impacts, either because none of the immediate impacts has presented an environmental crisis, or because the impacts have not been seen as linked to climate change. In other regions, such as the Mackenzie Basin in Canada, governments have developed sophisticated planning processes at the territorial and regional level (Cohen, 1997, 306).

Future consequences of climate change are expected to be more dramatic and disruptive to humans than the near-term observed results. For instance, rising sea levels and permafrost thawing may necessitate extensive relocation of coastal communities and huge expenses for reconstruction of infrastructure. Yet scientists are not unanimous in their predictions of long-term consequences of climate change. In fact, a small but influential group of "greenhouse skeptics" (Singer, 1989; Kerr, 1989; Lindzen, 1990) repeatedly have advised policymakers to defer action on the climate issue, pending the results of further research. They have argued that even if climate risks are serious, the penalty for a few decades of inaction would be small (Schlesinger and Jiang, 1991, 220).

Individuals respond to changes in their immediate environment by making calculations of risk and evaluating expected consequences and alternative courses of action; then they usually select the least costly alternative that reduces their exposure to hazard. However, the scope and impact of global climate change present challenges and opportunities that are far beyond the means of individuals to resolve; they call for a collective response and action on the part of institutions. Institutions tend to respond even more slowly to predicted long-term consequences than to near-term impacts. Particularly is this the case when the time and place of impact are uncertain and the degree and type of change are unknown (Hellstrom and Jacob, 2001; Jaeger, Renn, Rose and Webler, 2001; Jasperson and Jasperosn, 2001; Miller, Clark, and Edwards, 2001).

This article introduces institutions as the independent variable in global climate change research. The questions it asks are how human institutions negotiate the uncertainties represented by global climate change, and specifically how regulatory institutions are influenced both vertically and horizontally. Indeed, it is institutions of government which will determine how scientific knowledge is received—whether it is regarded as credible, authoritative, timely, and persuasive.

We ask our questions in the context of the Arctic, where the effects of global warming are expected to be the most extreme. Our area of examination is oil and gas exploration and development on the Alaska North Slope. This offers a less than robust test of the effects of human institutions on global climate change for two reasons. First, oil and gas development projects have a limited time line. Rarely do they extend beyond 30 years (although Prudhoe Bay likely

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will continue producing for more than 50 years, and the cumulative effects of oil and gas development seem likely to open the mid-term global climate change window). Second, oil and gas development projects occupy a limited part of the vast arctic ecosystem. Even at their current extent on the Alaska North Slope, they encompass a small space, less than 200 square miles. Nevertheless, oil and gas projects expose the environment to risks and are evaluated carefully to determine the probability of damage.

The environmental regulatory regime in the American arctic

The high potential that oil and gas development may disturb the physical environment of the Alaska North Slope justified the creation of an elaborate and complex regulatory regime, which pits the interests of government agencies protecting the public interest against the oil industry. All three tiers of US government—federal, state, and local (the North Slope Borough)—are actively involved in the regulation of oil and gas development.

AGENCIES AND AUTHORITIES

Primary federal regulatory agencies include the Fish and Wildlife Service, National Marine Fisheries Service, Minerals Management Service, and the Bureau of Land Management of the Department of the Interior, the US Army Corps of Engineers (COE), and the Environmental Protection Agency (EPA).

State regulatory agencies include the Division of Oil and Gas, the Division of Land, and the Division of Mining and Water Management of the Department of Natural Resources, the Department of Fish and Game, the Department of Environmental Conservation, the Division of Governmental Co-ordination in the Governor's Office, and the Alaska Oil and Gas Conservation Commission. Both the planning and wildlife departments of the North Slope Borough have regulatory authority as well.

The bias of US law, regulation, and policy is to prohibit development activities posing a risk of environmental disturbance, but to allow exceptions, on a case-by-case basis. Government commands and controls whether and where oil and gas development may occur. In the 30 years' of intensive exploration, development, and production of oil on the Alaska North Slope, a series of measures have been devised through the permitting process, in order to mitigate disturbances to land and water bodies and reduce the risk of pollution.

CO-ORDINATION

The issuing of a single permit invariably involves multiple agency review, and usually federal, state, and local agencies. For these reasons, co-ordination of the regulatory process is particularly important. Three co-ordinating systems are used in the regulation of large projects: the Joint Federal-State Pipeline Office (JPO), the coastal zone consistency determination process, and the environmental impact statement (EIS) review.

The complexity of this multi-level regulatory system is revealed in the North Slope EIS process. The COE typically is the lead agency, joined by federal Fish and Wildlife, National Marine Fisheries Service, Minerals Management Service, and the EPA. The state of Alaska may serve as a "co-operative agency," meaning it sits at the table with federal regulators, as may the North Slope Borough.

The agency review process is lengthy and cumbersome, and in its early years was subject to a barrage of criticism from industry. In 1981 the National Petroleum Council made these objections to the complex, interagency and intergovernmental regulatory process: that the process was duplicative and redundant; that the legal basis of stipulations was often unclear; that regulatory objectives often were ambiguous and results of the process sometimes inconsistent; and that long periods of time were required to obtain permits needed to begin exploration and production activities (National Petroleum Council, 1981). In recent years, however, relationships have become somewhat less adversarial, but still conform to the command-and-control model. The agency review process provides ample opportunity for discussion of climate change variables.

Three cases of oil and gas development

Our data sources are from recent oil and gas development projects on the Alaska North Slope. Two are onshore projects (Badami and Alpine) and one offshore (Northstar). For each project we discuss the facts of the case, climate change issues emerging in the permit review process, and what the case reveals about the role of climate change in agency decision-making. We then make preliminary assessments about agencies, climate change, and the diffusion of ideas and policies.

BADAMI

British Petroleum (BP) acquired the Badami lease from Conoco in late 1993; it proposed to develop this small field, with about 115 million recoverable barrels

of oil, in 1994. Located farther east than any other Alaska oil field, 35 miles distant from Prudhoe Bay and fronting Mikkelsen Bay, Badami is called the "gateway" to the Alaska National Wildlife Refuge (ANWR). The controversial issue of oil development in the refuge has figured prominently in both national and state policy discussions for more than a decade, and it influenced the Badami permitting process.

Badami raised two issues bearing on climate change. Initially, BP planned to bury a chilled pipeline underground, running it for 27 miles to a tie-in point on the Endicott pipeline. This would have been the first buried, chilled pipeline constructed in the American Arctic, and it occasioned concerns about an increase in erosion and thawing, as well as pipeline rupture, all of which would have impacts on species used in subsistence. Burying the pipeline would cause permafrost thawing, which would create east-west drainage around the pipeline, and substantial erosion around north-south flowing creeks and rivers. The potential for thaw out would increase in the summers, creating freeze bulbs around the pipeline. Further, maintaining a constant cold temperature in a chilled pipeline would be difficult; changes in oil temperature over time would affect pipeline integrity and perhaps result in rupture or jacking the pipeline out of the ground. Ultimately, BP changed the proposal by constructing an elevated pipeline with sub-surface river crossings.

A second area of environmental change concerned BP's planned construction of a large dock (pictured by some as a causeway) including a drilling pad. Constructing the dock would require substantial dredging in the near-shore marine environment, called a brackish water band, which is highly susceptible to changes of climate and in the amount of rain. A long dock potentially would disturb this eco-zone.

BP involved government agencies earlier in its design process than it had previously, and most participants agreed that there was a collaborative relationship between BP and the agencies. Said one participant:

> The decision to go from above ground to a buried chilled pipeline was not driven by agencies, but was based on reservoir engineers. They thought the crude was cold enough at the start. If you chill the pipeline, then you can bury it; and it eliminates the effects of a raised pipeline. The agencies went along with them. Then things changed: 1) we learned more about the crude; there were questions as to whether it could be pumped or not; 2) it was too cold; also, the length of the buried pipeline became an issue . . . 3) the cost.[258]

In general, both federal and state agencies approved of the design of a buried chilled pipeline, believing it had advantages in terms of reducing interference to species movement and snow machine travel. However, the advantages of fully roadless development were offset by negatives or uncertainties, and ultimately the corporation changed its design plans to build an elevated pipeline. As this has been standard pipeline construction on the North Slope for transport of oil, the design raised few concerns.

The dock issue was problematical to all resource agencies, which typically object to solid-fill structures in near-shore development. Solid fill structures affect the temperature and salinity of the near shore, and this influences the movement of migratory fish. Initially, BP proposed a longer dock, about the size of two football fields. In the review process, BP consolidated its dock operations and shortened the dock to one football field in size. In the words of one participant, "The driving force (in dock size) had nothing to do with the agency. They (BP) just went with what they needed for size."[259]

Climate change effects were considered at the geotechnical design process in the Badami project. The primary factor in this project was thaw subsidence. The corporation's analysis of its decision-making in switching from a buried chilled to elevated, hot oil pipeline seems credible. Results from sub-surface drilling and well results indicated problems in the design: the fluids were not conducive to being chilled. Purchase of several large chilling units would be necessary, which would increase the cost of the project over that of an elevated pipeline. For this reason, cost savings, BP again revised its plans.

ALPINE

Arco proposed development of this field, with 365 million barrels of recoverable oil, in 1994. The field is located in the Colville River Delta, 8 miles north of the Native village of Nuiqsut and 34 miles west of the large Kuparuk field. Alpine is considered the gateway to oil and gas development in the area west, particularly in the National Petroleum Reserve-Alaska (NPR-A). Arco proposed to build two gravel pads connected by a 3 mile road. Only an elevated pipeline would connect Alpine with Kuparuk. No roads would be constructed beyond that connecting the two pads. Summer travel to the field would be by air; winter travel would be by ice roads and bridges. The village of Nuiqsut, however, has sought development of a year-round road; it supported development of the project because of access to a supply of natural gas to meet village energy needs.

[258] Interview with Ted Rockwell, U.S. Environmental Protection Agency, Anchorage, July 21, 2000.

[259] Interview with Jeanne Hanson, National Marine Fisheries Service, Anchorage, June 6, 2000.

Three issues at Alpine involve climate change effects. The first issue concerned the crossing of the Colville River, an area of continuous permafrost. Although Arco briefly considered building bridges over the Colville, its recommendation was to bury the pipeline below the Colville using horizontal directional drilling (HDD), a technology then untested in the Arctic.

A larger issue was the field's position in a huge delta with immense resource values for North Slope residents and an area with widely fluctuating water levels.[260] This raised concerns over the impact of seasonal flooding on the pipeline and infrastructure, and especially damage from ice in spring break-up. Too, subsidence problems might arise in zones of transition from permafrost to thawed soils.

A final issue raised in the Alpine permitting process was the cumulative effect of oil and gas development. Critics objected to the large expansion of oil and gas projects since the establishment of the Prudhoe Bay complex in the 1970s, and contended that each new project needed to be considered with respect to the overall impact of oil and gas development on the fragile arctic eco-system.

Horizontal directional drilling had been used previously in New Orleans, but never in the Arctic because of its high cost. The first concern of agencies was the location of the Colville crossing, with a rigorous inspection of three alternatives. Influencing this decision was analysis of two variables: 1) higher versus lower value habitat, and 2) moist versus dry tundra (which is outside the COE's jurisdiction).

Federal agencies also considered alternatives for bridge and trench crossing. They concluded that HDD was the preferred method, based on the potential for an oil spill. If floods damaged the pipeline bridge, oil would flow into the Colville, and HDD reduced this risk. Regulators convinced Arco that casing the pipeline would offer prevention and better containment and recovery means. Too, casing the pipe reduced somewhat the danger of thaw settlement (melting that results from pumping hot oil).

A related and much broader issue was contamination elsewhere in the delta, including drill pad sites, and the likelihood of flooding. Contractors for the industry prepared hydrological reports and attempted to estimate the frequency of flood events. However, federal regulators and specifically the COE had only 25 years of data to use in predicting 100-200 year flood events. Nevertheless, this satisfied the standard of "conservative reliability."

In the estimate of some resource agencies, however, this standard did not factor in a catastrophic flood. The pipeline from Alpine to Kuparuk crosses many braided channels of the Colville, and the flood plain is 30 miles across. Said one DEC official: "For heavily braided rivers, it is hard to control where the oil goes—it all may dump into the Beaufort Sea."[261]

Trustees for Alaska, on behalf of both national and Alaska environmental organisations, filed suit in federal circuit court to enjoin the permitting of Alpine in 1997. This suit made two points. First, that the COE should have completed an EIS instead of an EA. Trustees argued that the expansion of the North Slope infrastructure 34 miles west, into the Colville Delta and to the doorstep of NPR-A, was a large change, justifying the full EIS process.

Second, and the crux of the position for environmental organisations, was the lack of cumulative impacts analysis. While the COE had contended that the Alpine footprint was small, making it unnecessary to plan beyond the EA, Trustees argued that the oil and gas industry had created an intricate driftnet from the east to the west of the North Slope. This incremental expansion influenced Native subsistence resources, by reducing the Central Arctic caribou herd and by affecting habitat of fish and wildlife resources across the North Slope. Trustees lost this suit in 1999 when the federal court declared that three of the four parties it represented lacked standing. By then Alpine development had begun, and in late 2000 Alpine oil moved through the pipeline.

NORTHSTAR

BP bought the Northstar lease from Amerada Hess and floated development plans in 1995. The field is small, with 160 million barrels of recoverable oil, and is located in the near offshore (in state, not federal waters). BP planned to develop the field through directional drilling from the existing Seal Island site in the Beaufort Sea and transport the oil through a subsea buried pipeline. The island was to be reconstructed with man-made gravel during winter seasons.

The Northstar development has been dogged with controversy, focusing on the four alternatives presented by BP, and on BP's insistence that the most direct and shortest route, finally approved by the COE, was the best. Environmental and some Native organisations protested the routing, the issuance of the EIS and permits, and the actual construction and development, a protest reaching into the boardroom

[260] The Colville Delta is an aquatic region of national importance (ARNI), a national aquatic resource.

[261] Interview with Robert Watkins, Supervisor, Spill Response Unit, Department of Environmental Conservation, Anchorage, July 21, 2000.

of BP itself in 2000 (*Anchorage Daily News*, 5/7/2000).

Two issues involving global climate change affected the review process for the Northstar project. The Northstar case is particularly significant because it is the first offshore oil development project in the US, and would involve a sub-sea pipeline constructed in arctic waters. Changes of ice conditions because of global warming might have an impact on the under-sea pipeline. For example, storm surges and ice keels might gouge and rupture the pipe, releasing oil into the sensitive near-shore Arctic Ocean ecosystem. Erosion from strudel scours (when the ice cracks and creates an eddy, which removes the cover of the pipe) might have similar effects, necessitating attention to the depth of the pipeline trench.

A broader concern was the impact of changing ice and storm conditions during construction phases on the island and pipeline installation, impacts on shore erosion, and of massive ice impacts such as ice ride-up, lateral stress, and slope stability on island design, drilling pad, and development facilities. This concern also incorporated the issue of the best route for the pipeline, the siting issue.

All alternatives considered in the EIS involved sub-sea pipelines, and the issues were instead how deep to bury the pipe to prevent ice gouging/keeling and other climate effects and what type of pipeline system to install. In planning for the digging of the pipeline trench, depth was the issue, because of the risk of pipeline rupture and oil spills; mid-term climate effects were considered too. For example, EPA's review stated:

> That is the main issue for Northstar—making sure that it is buried below the deepest ice keel/gouge, roughly 9 feet. (Question: do you have data showing the need for this?) We never have data to answer these questions. There's disagreement on the proper burial depth. Traditional ecological knowledge leads one to believe that there could be a 20-30 foot gouge. We have only 17 years of data for the Beaufort. But the data available from other world regions shows much the same thing. In the 17-year period, the deepest gouge was 3 feet.[262]

For the state Department of Environmental Conservation (DEC), oil leak detection was the critical issue, and this agency criticised the integrity of the pipe BP planned to use and the system for leak detection, which in its view might allow 4,000 gallons of oil daily to escape. Most critical of BP's spill response capability has been DEC's spill response unit.

> From the perspective of the COE, the alternatives were evaluated against guidelines. The Northstar project manager for the COE remarked: If it meets 404B criteria, then they can do it. . . . We don't select an alternative because we like it better. We said in the EIS that alternative #5 was environmentally preferred; but that doesn't include economic factors. Resource agencies don't consider the economics or logistics of a proposed development activity. So that's why we went with BP. That's clear, under NEPA rules.[263]

The National Marine Fisheries Service (NMFS) preferred the West Dock alternative, believing it less likely to lead to oil spills and adversely affect whale migration. Yet it declined to elevate because "we've always wanted a sub-sea pipeline for offshore oil and gas development,"[264]and because the BP alternative avoided the near-shore area and the need to cross the permafrost transition zone—and thus was the lesser of two evils.[265]

The federal agency that did protest the COE's decision was the federal Fish and Wildlife Service (FWS). Its rationale was that the West Dock alternative was preferred by most of the federal agencies. It was a permafrost-free zone with stable substrata, no erosion, and near to oil spill response equipment. Moreover, this route avoided the near shore lagoon during production time: "This is a very productive zone. It is the migration corridor for whitefish and salmon, and the molting area for old squaw ducks."[266] The FWS elevation, however, was not supported. In the end, all state agencies, the North Slope Borough, and all federal agencies save FWS supported the BP alternative.

In the COE's review, short-term and perhaps even mid-term climate change effects appear to have been taken into consideration. The COE used the Cold Regions testing lab as a resource to investigate the potential impact of ice pounding on structures and pipelines. It cumulated statistics, including 100-year events. In fact, although Northstar has a projected life of 15 years, agency personnel looked at it in terms of a much longer time frame, making calculations for a period of 100 years.

Because of the potential for ice override, the COE stipulated that the transition pad at shoreline had to be 100 feet and not 50 as BP proposed. Also, it required the construction of a berm around the island

262 Rockwell, ibid.

263 Interview with Terry Carpenter, Project Manager, Alaska District, U.S. Army Corps of Engineers, Elmendorf AFB, July 20, 2000.

264 Hanson, ibid.

265 NMFS has a collaborative relationship with the Alaska Eskimo Whaling Commission, which initially opposed Northstar development because of the creation of noise and the risk of oil spills, both of which would adversely affect whales. By the time NMFS began considering elevation in opposition to the BP decision, the AEWC position had changed and it urged the federal agency to withdraw its objection.

266 Interview with Eric Taylor, Fish and Wildlife biologist, Northern Alaska Ecological Services, U.S. Fish and Wildlife Service, Fairbanks, June 15, 2000.

to deal with concerns raised during the EIS review. The North Slope Borough had focused on the risk of ice override, citing an ice event at Cross Island where a large pile up of ice in 1998-99 reached about 40-50 feet. The primary Native organisation opposing the Northstar EIS, and joining a law suit against BP, was the Inupiat Community of the Arctic Slope. Its Tribal Enforcement officer opposed offshore oil and gas development in a generic sense: it would endanger marine mammals, specifically whales, and the oil companies lacked acceptable oil spill contingency plans.[267] These, however, are traditional objections to offshore oil development and do not engage issues of global climate change.

Agencies and climate change: Diffusion of knowledge and uses of authority

We have examined three cases of oil and gas development; they are of recent vintage, occurring at a time when knowledge of climate change has been expanding. This area of focus establishes a threshold for agency response. It is an effective means of testing the diffusion of ideas and policies from global institutions and from the epistemic In the following two sections we ask what approach non-governmental organisations (NGOs) and industry have taken to climate change in the course of their interactions with government regulators.

KNOWLEDGE

Most of the respondents in federal and state agencies who had backgrounds in the biological sciences were familiar with the literature on global warming (with the exception of one FWS biologist who claimed ignorance). Approximately one-fourth were familiar with the second (1996) Intergovernmental Panel on Climate Change (IPCC) report. The diffusion of knowledge from the scientific community occurred directly through academic training, work-related reading and conferences, and indirectly through interaction with environmental organisations (and particularly Greenpeace representatives).

One example was provided by regulators in the state Division of Lands who focused on immediate effects of ice scour and broken ice conditions: "Generally, we understand the process. The hydrologists deal specifically with it, and we defer to them. . . . They felt, based on the historical data, that it was okay."[268] In this instance, BP had engineering data signifying the absence of an impact from climate changes, to which the Joint Pipeline Office agreed.

DIRECT AUTHORITY

Only one agency had statutory or regulatory authority that seemed to apply directly to climate change effects—the state Division of Lands. This agency opens and closes the tundra for winter oil field construction, testing the depth of the frost with frost probes (12 inches of frost and 6 inches of snow cover are necessary for tundra travel of heavy duty equipment). In response to forecasts and its on-site measurements, the agency closed the construction season earlier than usual in 1999-2000, which presented problems for industry. However, this agency's behaviour is more likely to be based on local snow cover at the time than long-term climate trends, and snow cover varies annually.

More typical was the response of a COE regulator: "No federal agency has a regulation or responsibility for global warming. It is not a criterion under the clean air or clean water acts."[269] An NMFS regulator remarked: "We couldn't use climate warming to support conditions on permits. There is no scientific basis for this yet. We need to be able to establish the causal links. . . . There were various opinions about whether we legally needed to address it. Ultimately, we did address it and to some we simply 'blew it off'"[270] A FWS official commented that climate warming did not "fit in our authorities. There would have to be a very direct impact on a species or habitat."[271]

Trustees for Alaska, which represents Greenpeace as well as other environmental organisations with concerns about global warming in the American Arctic, had a balanced perspective on the authority of agencies to respond:

> You have to evaluate the EIS decision. You need to ask: Can you convince a court? You must relate climate warming to the particular case. Can you convince a court in San Francisco? In our evaluation, we ask: 1) Is there legitimacy to the belief that the decision was inadequate? 2) Can I convince a court of my view? . . . To find a legal hook on global climate change is very difficult. The laws aren't there. There's only NEPA. There are international agreements mainly. So Greenpeace has run an advocacy campaign on global change.[272]

Engineers in the Right-of-Way Division of the State

[267] Interview with Bill Tegoseak, Tribal Enforcement Officer, Inupiat Community of the Arctic Slope, Barrow, June 30, 2000.

[268] Interview with Leon Lynch, Natural Resources specialist, Division of Lands, Department of Natural Resources, Fairbanks, June 16, 2000.

[269] Carpenter, ibid.

[270] Hanson, ibid.

[271] Interview with Larry Bright, Northern Ecological Services, U.S. Fish and Wildlife Service, Fairbanks, April 20, 2001.

[272] Interview with Michael J. Frank, staff attorney, Trustees for Alaska, Anchorage, July 20, 2000.

Pipeline Coordinator's Office considered climate data to be part of a routine pipeline analysis. Although they were limited by having only 17 years of data, they projected 100-year events, finding there to be little difference between 100-year and 200-year events. Yet routine authority was an insufficient basis to use in developing mitigation measures: "We can't impose anything about the DOT (Department of Transportation) standards (for pipeline safety)."[273]

Finally, a DEC official said his agency did not pay attention to climate warming: "The state's planning laws are based on leak detection. . . . Our criteria are not subject to short-term climate changes."[274] In short, regulators can only work within their legislative authorisations and their established regulations. If Congress directed them to consider global warming issues, they could do so.

INDIRECT AUTHORITY

Federal agencies considered global warming effects under the five year Minerals Management Service (MMS) plan for oil and gas development, but they did not treat it on a project specific basis. The most frequently cited indirect authority was the leasing plan:

> If you look at global warming per se, on the OCS, it is a programmatic decision. We evaluated it in the 5-year leasing program, with respect to the question of whether we should offer leases or not. In our opinion, if we don't produce oil, we will need to import it, so there's no net change.[275]

Both state and federal agencies did consider climate warming indirectly in the context of oil spill contingency (or "C") plans. A former DEC regulator mentioned:

> One thing the C plan people said was to keep the ice lanes open for barges to get out. They want spill response barges in the transition zone. So climate change influenced that. If you do that, have an open ice regime, it will affect the bowhead. So the requirement to keep the sea lanes open 4-6 weeks at freeze-up and in the spring, that was dropped; this was due to climate warming concerns.[276]

In the absence of specified statutes and regulations, some agencies found indirect authority for a response to global warming effects through related criteria. Perhaps the best example is the use of the cumulative effects standard in the EIS process, which agencies are directed to consider under terms of NEPA. However, the standard has changed in meaning and application over time, particularly in consequence of court cases. Consensus has yet to develop on an appropriate approach, and information is incomplete.[277]

INCLINATION

Agencies at the federal level were most responsive to purported evidence of the impact of climate warming on valued subsistence species. Said an NMFS regulator:

> What does the warming trend mean for the population of animals out there? Will the whales go farther off shore? Will the Natives have to follow them out farther off shore? We need to take that into consideration We talk about this, collectively; as scientists in the agency, we need to consider it.[278]

Although industry often has criticised agency regulators for applying criteria lacking a statutory or legal basis, we did not find stipulations or conditions attached to permits based on climate change effects alone. The regulators we interviewed, however, were inclined to take discussion of climate warming seriously and to opportunistically use the most relevant regulations and statutes as a basis for their concerns.

Most of the regulators interviewed did not believe that uncertainty associated with climate change had an effect on the permitting process. Said a state agency representative: "The operational constraints of weather are self-effecting . . . To the present, uncertainty hasn't caused delays or led to postponements of permits. We swing from warm to cold, but it doesn't change anything."[279]

In sum, a significant number of the regulators we interviewed were conversant with the climate change hypotheses, and they discussed them in the context of the permitting process. These discussions have followed the international focus on climate warming, from 1997 and intensifying by turn of century. Climate warming was a minor factor in the Badami permitting decision, and was relevant (albeit not a major issue) for both Northstar and Allpine. We can conclude that both global institutions and the epistemic community had an impact on some regulators. This impact, however, was constrained by the authority under which they operated.

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[273] Interview with Tony Braden, Chief, Right-of-Way Section, State Pipeline Coordinator's Office, Anchorage, June 5, 2000.

[274] Watkins, ibid. This comment was echoed by Ted Moore, Environmental Specialist, Industry Preparedness and Pipeline Program, Division of Spill Prevention and Response, DEC, Anchorage, June 6, 2000.

[275] Interview with Fred King, Chief, Environmental Assessment, Minerals Management Service, U.S. Department of the Interior, Anchorage, June 8, 2000.

[276] Interview with Bradley Fristoe, (Formerly) Northern Region, Department of Environmental Conservation, Fairbanks, June 20, 2000.

[277] In 2000, Congress authorized the National Academy of Sciences to conduct an 18-month investigation of the cumulative effects of oil and gas development on the Alaska North Slope.

[278] Hanson, ibid.

[279] Interview with Matt Rader, Division of Governmental Coordination, Anchorage, October 14, 2000.

The oil industry and climate warming

Multinational oil corporations have been decisive factors in the diffusion of ideas on climate warming and the diffusion of environmental technology in the North Slope environmental regulatory regime. The oil industry has made technological improvements in order to profitably develop deposits once considered marginal, which has reduced production costs in the early 21st century to one-fourth of those in the late 1960s.

The technological changes, diffused to the Arctic Slope, have also had environmentally benign effects. Five specific changes bear mention. First, directional (extended reach) drilling changed the way the oil industry taps distant petroleum accumulations. From a single pad, operators have access to a larger area, to a distance of four miles. Second, exploration and production footprints have been reduced by more than 80% through closer spacing of well-heads and construction of smaller pads. Third, drilling efficiency has increased because of the acquisition of advanced seismic data and interpretation. Fourth, disturbances to tundra declined as industry created roadless developments, and used winter ice roads (leaving little trace after break-up) instead of gravel roads. Finally, industry increasingly has re-injected drilling mud and other industrial waste into wells instead of disposing of it in surface reserve pits.

The Badami case revealed the clearest instance of diffusion through the agency of a multinational oil corporation. A BP affiliate in Canada had constructed a buried, chilled pipeline at the Norman Wells oil field, which prompted Alaska BP operatives to consider this technology for development of Badami oil. A senior BP environmental scientist commented:

> In January 1995, BP formed the design construction facilities alliance in Calgary, and we shifted our work there. We formed an office of design, construction, engineering, to take advantage of the synergy of working together. There was an integrated team. Our rationale was based on a conceptual engineering analysis. We looked at a buried, chilled pipeline as producing significant cost savings. There'd be no VSM (vertical support members); it still would be a steel pipe.[280]

BP learned that the Badami oil was not conducive to being chilled, and that the costs of chilling would be higher than constructing a standard, elevated pipeline. Nevertheless, the innovation it proposed met ready approval of regulators, who found the chilled pipe design environmentally friendly. BP's development of the "Badami Process"—a co-operative and iterative method of working with government regulators—is an example of the diffusion of practices.

Indeed, British Petroleum has played a leading role among oil multinationals in addressing climate change. CEO John Browne's speech at Stanford University in May 1997 announced a corporate decision to accept increasing evidence of climate change and to modify corporate strategy accordingly. BP was the first multinational other than re-insurance companies to join the emerging consensus on climate change. It committed to reduce greenhouse emissions from all of its business operations and proposed to join international efforts to reduce greenhouse emissions. And solar energy officially "moved up to the big table" on par with BP's three other lines of business—exploration, oil, and chemicals (Lowe and Harris, 1998, 3).

Globally, BP has exceeded Kyoto agreement targets on carbon dioxide emissions, and in 2000 it organised six other global energy companies to develop technology to reduce carbon dioxide emissions. Further, an emissions trading system has been a powerful tool globally within BP, and it has spent millions of dollars on technology to reduce carbon dioxide emissions. On the Alaska North Slope, BP has shut down turbines to reduce carbon dioxide outputs, resulting in some production losses. It tracks carbon dioxide emissions on a monthly basis and makes these data publicly available. The corporation has extended its original commitments to facilities acquired from Amoco and Arco in recent mergers, and evaluated each opening of a new field in terms of its ability to avoid increasing carbon emissions. Finally, in Alaska, BP has shifted its focus to emphasise natural gas with lower carbon content, advertising a greater interest in the Alaska natural gas pipeline than in development of oil in ANWR. This does not mean, however, that BP or Alaska's other oil giants (Exxon and Phillips) have met concerns of environmental protests on climate change issues.

Industry's position has been to address climate warming in terms of its cumulative effects argumentation, as seen in the BP response: "We gave more information on cumulative impacts than before. . . . There was, however, an awareness of the need to do a very good job on Northstar.. But, in any case, the life time for Northstar is only 15 years, which is a short period for macro-climate changes."[281] BP responded similarly to the Liberty draft EIS. In short, industry has tended to deny any climate change effects in the permitting process.

The oil and gas industry has not taken a uniform

[280] Interview with Karen Wuestenfield, Senior Environmental Scientist, BP, Anchorage, July 21, 2000.

[281] Interview with Peter Hanley, Director, Government Relations, BP, Anchorage, July 24, 2000.

position on the issue of global climate warming, however. BP increasingly advertises itself as a "green" corporation. Arco/Phillips, on the other hand, has a position on global change that differs from BP. It did not regard global warming as an issue figuring in the Alpine development, and believed its environmental monitoring and review process was sufficient to accommodate any concerns.

Non-governmental organisations and climate warming

The primary environmental organisation focusing on the impacts of climate warming related to oil and gas development has been Greenpeace. This organisation's report on global warming features observations of arctic peoples as "first hand evidence that impacts of climate change are being felt now." As mentioned, Greenpeace took advantage of the federal public comment process to raise the issue. However, its comments were non-specific. In the words of one agency regulator "This was just Greenpeace's issue of the year."[282]

This notwithstanding, the BP contractor, Dames and Moore, did respond to the comments, and the final EIS has a 10-page section on global climate warming. The report considers the nature of climate change variability, its causes, and the budget for carbon emissions traceable to the development of Northstar. This EIS section concludes by remarking: "(I)t is clear that North Slope cumulative activities and related production represent a small portion of the world-wide fossil fuel-related contribution, and Northstar specific contributions represent such a small component as to be nearly immeasurable (US Army, 1999)."

As drilling was about to commence on Northstar, Greenpeace engaged in direct action. Activist Melanie Duchin chained herself to an oil rig in symbolic opposition to the first oil development activity in the American OCS. Although Greenpeace has gained support of other environmental NGOs for its legal action against federal and state agencies over permitting decisions, no other environmental group joined this resistance effort.

Instead, environmental organisations have focused their attention on agencies most likely to be responsive to their concerns. Federal agencies, and particularly the EPA and FWS, tend to share information more readily and respond to NGO concerns. State agencies, including Fish and Game, are less responsive.

Part of the Greenpeace argument against oil development is its threat to Native subsistence, and this expresses a sometime alliance between environmental and Native NGOs. They joined forces to oppose construction of the Trans-Alaska Pipeline until an EIS was crafted. In other countries, environmental and aboriginal organisations together have resisted ecologically destructive projects (Taylor, 1995).

Yet such an alliance has not formed to challenge North Slope oil and gas development. Inupiat who control the North Slope Borough derive huge economic benefits from oil exploitation. Probably the richest local government in the world, the Borough draws nearly 100% of its revenue from taxation of oil company profits (McBeath, 2001). Only the Inupiat Community of the Arctic, a small tribal organisation, spoke against Northstar and Liberty

Conclusions

In the last decade, climate change has become a factor in the decisions American Arctic regulatory agencies have made on resource development projects. We examined three recent cases of oil and gas development—Badami, Alpine, Northstar—and in each found instances of climate change issues. In Badami, the proposed construction of a chilled, buried pipeline raised agency concerns about thaw settlement and permafrost melting. In Alpine, the use of a new technology, horizontal directional drilling, in the crossing of the Colville Delta, raised issues concerning thaw subsidence and permafrost melting. The Northstar case, proposing construction of a sub-sea pipeline from an offshore island to permafrost shore zones, raised issues of thaw subsidence, and the more important concerns of ice gouging and strudel scour damage to the pipeline.

In none of the three cases did the climate change issues appear to have a significant bearing on the permitting actions of agency regulators or industry. In Badami, BP decided to build a hot oil, above-ground pipeline because it was less costly. In the Alpine case, Arco adapted the HDD technology because it was less environmentally risky than bridges. BP's siting decisions in the Nortstar case was based primarily on economic grounds. BP declined to use double-walled pipe, which several agencies recommended because of potential climate change effects. No agency had the authority to insist on double-walled pipelines, which has not yet become standard industrial technology in the American Arctic.

Our preliminary findings are that arctic regulatory institutions are developing knowledge about global

[282] Carpenter, ibid.

warming and its specific effects on oil and gas development projects. Global institutions such as IPCC and the epistemic community play a role in diffusion of knowledge. However, agencies do not uniformly regard climate change as relevant to the permitting process. The resource agencies, and particularly agency officials with backgrounds in biological and environmental sciences, appear to be the most knowledgeable and most likely to make reference to climate warming in their reviews of lease operations, right-of-way, and materials sales permits. And federal agencies are more likely to include climate effect issues in their scopeing processes than state agencies.

Several agencies incorporated climate change criteria into their review processes based on inferences from other authorities. For example, federal agency representatives mentioned the way in which global warming might influence the 5-year schedule of oil leasing. All federal agencies considered climate change effects under the broad rubric of cumulative effects, which is an important (albeit variable) criterion under NEPA. It is significant that during the Northstar EIS process, global climate warming effects were discussed, and the EIS documents record this discussion. This would seem to insure that in future development projects, global climate change may become a standard reference criterion.

Oil companies operating in the American Arctic have not adopted an uniform stance on global warming (although all believe individual projects will not accelerate climate change). British Petroleum's claim to progressive leadership was challenged by Greenpeace in the Northstar and Liberty EIS reviews. Phillips succeeds to Arco's stance that climate change has no discernible effect on its new oil fields. Yet multinational oil companies are the most significant actors in the diffusion of environmental technology.

Environmental organisations have added climate change to their list of objections to new oil and gas development projects, with Greenpeace as the most robust advocate of sharp reductions in carbon emissions, achievable through a halt to exploration and development projects. The Alaska environmental organisations have had more success in using the federal than the state environmental review process, because the former provides ample public notice and comment periods. When this process does not yield satisfactory results (it did not, from their perspective, in the Alpine and Northstar cases), then environmental organisations have moved to different venues (challenging permitting decisions in court) or sought to arouse the public through confrontation and mobilisation tactics. Most Native NGOs have been disinclined to form alliances with environmental NGOs to stop oil development, as they benefit from the revenues it produces. This dampens the influence that NGOs have had elsewhere in spreading awareness of global climate change and cultivating support for sustainable development.

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International Constraints and Transnational Diffusion: The Dynamics of G8 Effectiveness in Linking Trade, Environment and Social Cohesion

*by John Kirton**

Amidst the contemporary debate over globalisation, there are few elements that command such consensus as the assumption that this process has at its core a foundational ideology of neoliberalism. As it grew from an initial 'Ronald Thatcherism', through a policy-oriented 'Washington consensus' (Williamson 1993, 1990; Birdsall and de la Torre 2001), to a full-blown 'disciplinary neo-liberalism' (Gill 2000), it seems to have transformed and then replaced the prior ideological foundation of 'embedded liberalism' constructed by the victorious World War Two allies as the core of the institutionalised order created in 1945 (Ruggie 1983; Ikenberry 1998/99, 2001). Neoliberalism celebrates of internationally free markets for goods, services, direct and portfolio investment, and intellectual property, a celebration of the need for domestic privatisation and deregulation, and a celebration of the virtues of constricting the domestic role of the economic and social regulatory state. The new ideology and processes, it is charged, 'tends to atomise human communities and destroys the integrity of the ecological structures that support all life', thereby generating a 'crisis of social reproduction on a world scale, a crisis that is ecological as well as social' (Gill 2000, 1). Such an ideological revolution is seen as all the more powerful and permanent for having been institutionalised in the international organisations at the centre of the global political economy, notably the International Monetary Fund (IMF) new World Trade Organisation (WTO) created in 1994 (Moravcsik, and Slaughter 2000; Goldstein and Martin 2000). And at the centre of disciplinary neoliberalism is said to stand the G7 major industrial democracies, acting, along with the international financial institutions, in the 1980s and 1990s in a 'deliberate and strategic manner' (Gill 2000, 21; Gill 1999).

As the twentieth century ended, this neoliberalism consensus came under severe, sustained, and successful short-term attack. One sign was the proliferation of civil society protest and major intergovernmental economic meeting, culminating in the deadly Genoa G8 Summit in July 2001. As the 1997-9 global financial crisis gathered force, the reigning faith in neoliberalism, or at least its incarnation in Anglo-American liberalism or the Washington consensus assaulted and adjusted, as the leaders of both the IMF and WTO proclaimed their acceptance of the values of the protestors and proceeded with programmes of often far-reaching institutional reform (Kaiser, Kirton, and Daniels 2000; Kirton, Daniels, and Freytag 2001).

Is the G8 indeed at the centre of the construction constructing, enforcement and defence, of this disciplinary neoliberalism and of adjusting it in the face of societal dissent and major systemic change? To be sure, some dismiss the G7/8 as a 'soft law' institution of little consequence (Goldstein et al. 2000b, 2000a; Abbott et al. 2000) or as a body rendered ineffective by the post–cold-war globalisation of the 1990s (Bergsten and Henning 1996; Whyman 1995; Smyser 1993). Yet others claim that it has become an increasingly effective centre of global governance in the new era, for better (Kirton 1999; Hajnal 1999, Bayne 1999) or for worse (Helleiner 2001; Gill 1999). Even those who doubt its decisionmaking effectiveness concede that the principles and norms it promulgates can have important governance effects (Hodges, Kirton, and Daniels 1999; Baker 2000).

Those who consider the G7/8 consequential remain divided about the G7/8's response to the new social protest and global financial crisis. The first, 'conservative' reinforcement school suggests that the G7/8 has largely kept the new neoliberal emphasis in its market-friendly international institutional reform effort (Sally 2001; Freytag 2001; Donges and Tillman 2001; Theuringer 2001; Dluhosch 2001). The second, 'superficial adjustment' school, argues that the G7 and IMF have merely altered their rhetoric at the margin (Gill 2000; Dallaire 2001; Thérien and Dallaire 1999). The third, 'responsive leadership' school, asserts that a move to a new normative consensus on socially sustainable globalisation has come (Kirton, Daniels, and Freytag 2001). None of these competing schools, however, has conducted a detailed examination to identify the G7/8's seminal values, how they might have changed, and what new normative directions the recent crises have brought. Nor have they traced how these principles, norms and commitments have been complied with by autonomous nation-state members. And they have yet to offer well developed explanations about the causes of change in prevailing values and compliance levels, as a context for considering the role that transnational learning and alliances, on a global or regional level, play

This article conducts such an examination. It surveys

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the principles and norms that the G7/8 has articulated since its 1975 establishment in the key areas of trade, the environment, and social cohesion, to identify the priority it has assigned to each, the intersections it has identified among these realms, and the balance it has offered for the governance of this increasingly integrated domain. It concentrates on the content and strength of the G7/8's initial consensus, when and how that consensus might have eroded, and when and how a new consensus might have emerged. On that basis, it suggests, largely inductively, the sources of such ideological consensus and change as may have occurred. In particular, it identifies moves toward or from the articulation of a normative order of "embedded ecologism", based on the sustainable development ideal in which trade liberalisation, environmental enhancement, and social cohesion are tightly integrated, equally balanced, and mutually supportive.

This analysis reveals the G7/8 has progressively developed and has regularly asserted a doctrine of embedded ecologism.[283] This doctrine has defended the employment and social welfare values at the core of the 1945 consensus on embedded liberalism, while reinforcing them with a new array of ecological values, totally absent in 1945, that the G7/8 has integrated into the employment and trade spheres in protective and proactive ways (cf. Berstein 2000, 2001). In its fully developed form, embedded ecologism asserts that employment and social cohesion, and the democratic practices and polities they sustain, are fundamental to the G7/8's mission, that environmental protection as well as trade liberalisation fosters such objectives, and that trade liberalisation should take place only insofar as it protects and promotes environmental and labour values.[284] External liberalisation is thus bounded both by domestic and global welfare and ecological concerns.

The elements of embedded ecologism, evident at the G7 Summit's outset, developed into create a full and balanced framework during its early years. However in the 1980's the G7 came to adopt a conception of trade liberalisation that was far more aggressively far reaching than that of 1945, and entrenched in 1994 in a powerful WTO. Moreover, prompted by the OECD, the G7 turned from a macroeconomic trade- and growth-based conception of employment to one privileging domestic market-oriented structural policies. In both cases, the weight of these economic and trade-focussed international organisations and their ideologies generated an institutional imbalance that assigned a subordinate place to ecological and social values in the G7's evolving doctrine. Yet at the start of its fourth seven-year cycle in 1996, before the 1997–99 crisis and the 1999 civil society assaults began, the G7 moved to restore the balance of earlier years. This task proved easier in the trade-labour realm, where the G7/8 could readily mandate the WTO to work with the International Labour Organisation (ILO) to extend and implement the new G7/8 generated principles. In the trade-environment realm, however, the G7 was left to affirm the principles of equality and integration, and cast increasing doubt on the WTO's record in realising them, without addressing the more fundamental institutional imbalance created by the absence of a world environmental organisation.

Establishing principles: The emergence of embedded ecologism

Within the G7/8, the doctrine of embedded ecologism emerged through fives stages, as follows: establishing the seminal trilogy in 1975; forging the trade-environment link by 1981, moving to trade-for-the environment by 1988; completing the trade-environment social cohesion triangle but with institutional imbalance by 1995; and redressing the imbalance by 2001.

ESTABLISHING THE SEMINAL TRILOGY, 1975

For an apparently economic summit focussed on replacing the international finance regime that had died at US hands on 15 August 1971, at the first gathering at Rambouillet, France, in November 1975 the G7 gave considerable and prominent attention to

[283] More specifically, embedded ecologism has four logically integrated components, as follows: 1. the ultimate value is *democracy*, including individual liberty and social advancement (and by extension the environmentalists "process" values of multistakeholder inclusiveness, transparency, civil society participation, and consensus decisionmaking0; 2. employment and social cohesion are each essential to the realization of democracy and should be devoted to this purpose; 3. trade liberalization and environmental protection/prevention each can and should promote employment and social cohesion; and 4. trade liberalization and environmental protection/prevention can and should be equally valued, integrated and mutually supportive.

[284] Among the rich array of multiple meanings ascribed to the term ' social cohesion', in this analysis it is used in three, increasingly expansive ways. Most narrowly, it is equated with labour and the principle that ' labour', along with ' land' (the natural ecology across all ambient media) should be accorded equal value to ' capital' (the third factor of production) in government policies and welfare outcomes. Secondly, it refers to the presence within a polity of strong social capital (Putnam, Leonardi, and Nanetti 1993), sufficient to offset atomisation (Kornhauser 1966) and the crisis of reproduction generated by globalisation (Gill 2000). Thirdly, it refers to the absence of cleavages, across land-labour-capital, mass populace-elite, and other (ethnic, religious, regional, linguistic, gender) divides sufficient to destroy a G8 country's character as a democratic polity or its national unity and thus continuation as a country.

trade, social, and environmental matters in its brief, but seminal, concluding communiqué.[285] What might be considered the 'Rambouillet Charter' of the G7 opened with the statement that the institution's ultimate concern was with the 'human, social and political implications' of 'economic problems common to our countries' (G7 1975). It declared: 'We are each responsible for the government of an open, democratic society, dedicated to individual liberty and social advancement.' It pledged 'to reduce the waste of human resources involved in unemployment', to make 'new efforts in the areas of world trade', and to 'avoid resorting to measures by which they could try to solve their problems at the expense of others, with damaging consequences in the economic, social and political fields'. It also promised 'to reduce our dependence on imported energy through conservation and the development of alternative sources'.

Thus at the start the G7 deal with all three elements: social cohesion, trade liberalisation in a limited anti-protectionist way, and environmental protection in the narrow resource conservation sense. It placed social cohesion, along with individual liberty, as the ultimate value. And it argued that social cohesion would be created by the higher employment that trade protected from protectionism would bring.

FORGING THE TRADE-ENVIRONMENT LINK: THE FIRST CYCLE, 1975–1981

During the first seven-year Summit cycle from 1975 to 1981, three normative developments took place. Increasing employment along with lowering inflation, became the dominant concern, with trade liberalisation identified as a key way of accomplishing both objectives. The environment became an equal, long term value in its own right, with preventative as well as protective strategies for its preservation endorsed. And the trade-environment link was directly drawn, if in a limited way, in the 1979 pledge 'to increase as far as possible coal use, production, and trade, without damage to the environment.' Indeed, by the end of its first cycle, the G7 has also singled out central environmental issues, specified microeconomic, sector-specific measures, and made environmental preservation integral to economic development as a whole.

TRADE FOR ENVIRONMENT: THE SECOND CYCLE, 1982–1988

By the end of the second cycle, a further pro-ecological shift in the intellectual balance had taken place. The image of this period as one of neo-liberal, Ronald Thatcherist ascendance is true in a limited sense. For during the period, employment came to be considered as requiring a host of pro-market micro-economic rather than demand-led, macroeconomic, aggregate growth policies. The conception of trade liberalisation was deepened to include these domestic measures for structural reform. Yes after an early downgrade, ecological values also experienced a major expansion, beginning with the big breakthrough of the Bonn 2 Summit of 1985. Moreover, the trade-environment-social cohesion link was directly and comprehensively forged in the specific field of agriculture. Here it was recognised that employment and a wide range of social values, from cultural diversity to family farming, were central, would be affected by, and must be protected or compensated in trade liberalisation and the move to market-oriented labour policies. The same was true for the environment (including food security). Moreover liberalisation, in agriculture and in trade, investment, and technology more generally, was called upon to be a proactive instrument for the fulfilment of ecological objectives. The principle of using trade liberalisation for the higher goal of environmental enhancement had arrived.

COMPLETING THE TRIANGLE AND INSTITUTIONALISING IMBALANCE: THE THIRD CYCLE, 1989–1995

These principles provided a foundation for a major expansion and deepening of the G7's concern with, and linkage among, trade, employment, social, and environmental values during its third cycle. During this time all three component areas saw a large increase in their range, detail, and ambition. Moreover, the summit began regularly to generate a set of direct trade-environment and employment-environment linkages, which, when joined with the earlier trade-employment linkage, completed the integrated triangular conception. Indeed, by the end of the cycle, the G7 had directly linked all three values together at a general level. While the third cycle witnessed an increase in the G7's liberalisation demands, employment—now joined by environmental integrity—assumed pride of place in the specified value hierarchy.

However the third cycle also saw an important transformation at its end. For the evolving cadence of affirming ever tighter, more balanced, and reciprocal relationships among trade-environment and trade-labour was broken in 1994, the year the WTO was born. That year, the G7 chose the old OECD and the new WTO as the bodies to develop and operational-

[285] Unless otherwise indicated, the declaration referred to is the comprehensive document issued by the G7 or G8 leaders at the conclusion of their annual summit. They are available at <www.g8.utoronto.ca>.

ise the connections. In 1995, as the WTO began its first year of operation, the G7 explicitly mandated continued trade liberalisation as the overriding parameter for the trade-environment and trade-labour balances being struck. At Halifax in 1995 a new trade-first approach was endorsed with the statement that: 'Consistent with the goal of continued trade liberalisation, we will pursue work on ... trade and environment to ensure that rules and policies in these different areas are compatible' (G7 1995). Continuing trade liberalisation was now the new parameter within which all linkage efforts must take place.

RESTORING THE BALANCE: THE FOURTH, 'GLOBALIZATION' CYCLE, 1996–

The fourth summit cycle, starting in 1996, saw globalisation arise as a major thematic preoccupation of the G7/8, even before the Asian-turned-global financial crisis of 1997–99 and its accompanying social trauma. During this time, the G7 embraced the themes of globalisation, social cohesion, and sustainable development with equal ardour. The G7's embedded ecologism, only recently subject to institutionalised trade capture, was quickly restored and extended, first normatively within the G7 and subsequently institutionally in the centres preferred by the G8.

In a rare display of the G7/8's prescience and proactiveness, the shift took place from the start, before the global financial crisis arrived. In 1996 the G7 laid down a challenge: "The Singapore Ministerial Conference of the WTO will be an important opportunity to demonstrate the ability and willingness to integrate environmental protection and thus sustainable development concerns into the multilateral trading system (G7 1996). In 1997 the G7 moved embedded ecologism into the field of finance, declaring that "Governments should help promote sustainable practices by taking environmental factors into account when providing financing support for investment in infrastructure and equipment. We attach importance to the work on this in the OECD, and 'will review progress at our meeting next year (G7 1997). In 1998 it called for inclusion throughout the world and to this end approved the implementation of core labour standards and the continued collaboration between ILO and WTO secretariats, in accordance with the proposals of both organisations.

The 1999 Summit saw a major expansion of trade-environment linkages, as part of its creation of a new 'Cologne consensus' on socially sustainable globalisation (Kirton, Daniels, and Freytag 2001). It set a deadline for the completion of the OECD export financing work. More importantly, it signalled a loss of confidence in the WTO efforts to date and expanded the *problématique* to include social welfare, stating,: 'We will also seek a more effective way within the WTO for addressing the trade and environment relationship and promoting sustainable development and social and economic welfare worldwide' (G8 1999). Moreover, it moved beyond the WTO alone as the institutional forum for the linkage effort by urging 'greater co-operation and policy coherence among international financial, economic and labour organisations'. Most ambitiously and broadly, it declared 'environmental considerations should be taken fully into account in the upcoming round of WTO negotiations. This should include a clarification of the relationship between both multilateral environmental agreements and key environmental principles, and WTO rules'.

By 2000, after the global financial crisis had ended, and as the summit hosting moved to Japan, the new Cologne consensus remained. The Okinawa Summit offered three trade-labour/social linkages. It again asked for effective WTO-ILO co-operation on the social dimension of globalisation and trade liberalisation, and offered more open markets to developing countries with sound social policies, while affirming that the multilateral trade system had brought social progress. In the trade-environment domain, Okinawa endorsed the OECD work on export credit policies, broadened it to involve the multilateral development banks, and reaffirmed the commitment to develop common environmental guidelines. It promised to combat illegal logging as part of a sustainable forest management approach. Most broadly, it declared that among the objectives of its desired new round of multilateral trade negotiations would be to 'ensure that trade and social policies, and trade and environment policies are compatible and mutually supportive' (G8 2000). The need for integration, equality, and mutual support in both domains had been accepted.

The 2001 Genoa Summit increased and expanded these trade-environment links. It added an obligation to 'ensure that the new Round supports sustainable development' (G7 2001). For the first time, it included the pledge that 'WTO should continue to respond to the legitimate expectations of civil society'. And it mobilised a new instrument on the 'MDBs [multilateral development banks] to provide support for global public goods, such as fighting infectious diseases, facilitating trade, fostering financial stability and protecting the environment'.

From principles to performance: The G7/8's trade-environment commitment and compliance record

Sceptics of the G7/8 Summit and system, realist scholars of international relations, and even liberal-institutionalist students of "legalisation" doubt that even far-reaching normative change encoded in "soft law" communiques have much real effect in constraining or altering the behaviour, let alone the conception of interests and identities, of the their autonomous major power members. Yet the available evidence in the G78's trade-environment process points to a different conclusion. It indicates that principles and norms are accompanied and followed by timely, well-tailored, significant and ambitious commitments, and further, that such specific, concrete commitments are complied with by G7/8 members to a substantial degree. Yet in the trade-environment domain, it also points until recently to a continuing imbalance, in favour of trade values.

COMMITMENTS

An overview of the systematic evidence on the G7/8's record in generating important Summit-defining commitments in the trade and environment fields comes from the work of Nicholas Bayne (2000), following that of Putnam and Bayne in earlier years (1987). Bayne's review of Summit performance from 1975-1999 lists several that have been productive because of their trade or environment-energy agenda or achievements. These data show, first, that these issues done much to provide the Summit's focus and product, from the start through to the early 1990's. Second, trade has been by far the dominant and most continuous contributor. It was challenged only by energy in the very early years (from 1975 to 1980). Third, environment has made only a single appearance, at Paris in 1989. Fourth, while trade and energy have co-existed as major agenda items and achievements at individual Summits, trade and environment together have not. Despite the principles and norms that accord equality to and connect the trade and environment domains, the Summits significant commitments still privilege trade in an unintegrated world.

A more detailed examination of the recent period from 1996-99, conducted by the G8 Research Group, suggests that this imbalance and lack of integration largely continues. The G7/8 offers a strong trade performance in each of these four years, and one generally ahead of the average for the Summit as a whole. Its environmental performance is generally weaker. But as seen above in the discussion of principles, in 1997 the environment and trade commitments are tied. And in 1998 environment comes ahead of trade. The year 2000 Okinawa Summit commitments, ranked by ambition and significance, suggests that it performed more strongly on its environmentally-related agenda than it did on trade (Kirton et al. 2002).

The ability of the G7/8 to take the general principles and norms linking trade-environment and encode them in concrete commitments is also evident. Of the 20 trade-environment passages that form the foundation of embedded ecologism in the leaders communiqué since 1975, ten—or a full half—take the form of specific commitments, according to the standard definition that Kokotsis (1999) employs. Of these ten, six have been offered in the four years since 1997. In its fourth cycle, then the G7/8 is clearly moving embedded ecologism from the realm of general principle to that of concrete commitment, as a prelude to real action.

In the G7/8's ministerial-level institutions, the translation of general principles into specific commitments also takes place. The G7/8's Environment Ministers' forum, established in 1992 and institutionalised as an annual event in 1994, has offered a total of 15 trade-environment principles in its eight years of operation, or an average of almost two per year. It has thus been marginally more productive that the leaders, who have produced 13 during the same time. However, while a full half of the leaders' trade-environment principles since 1975 have taken the form of commitments, only one third (five of the 15) of the environment ministers have. Even since 1994, the leaders have produced more trade-environment commitments than their environment ministers have. This pattern shows the unique ability of leaders to make linkages across long separated and ministerially segmented domains such as trade and the environment. And within G7 governments where lone established ministries of trade are far more powerful than their recent environmental sisters, the authority of leaders is needed to translated these new linked principles into concrete commitments.

COMPLIANCE

The evidence on compliance tells a similar tale, suggesting that the promised implementing action does indeed occur to make these commitments count. The initial work on compliance with G7 commitments, embracing all economic and energy commitments from 1975-1989 showed that while compliance varied widely by country and issue area, it was on the whole positive. In the field of trade and energy (the initial environmental surrogate) compliance was high in

absolute terms, and the highest of all in relative terms (Von Furstenberg and Daniels 1991. It also showed that across all issue areas together, relatively small Britain and Canada complied the most, while the relatively large United States complied second least

The second generation of compliance studies focused on the record of the least powerful member, Canada, and the most powerful member, the United States, in the issues areas of climate change, biodiversity, developing country debt and assistance to the Soviet Union/Russia from 19988 to 1995 (Kokotsis 1999). It revealed relatively high and rising compliance levels, with the United States now joining Canada as a highly compliant member of the club.

The third generation of compliance studies, conducted by the G8 Research Group for the period 1996-2000, suggests that compliance with environmental commitments has come to equal that in the field of trade. Indeed, in 1997-8 and 1998-9 G7/8 members complied with their priority environment commitment more strongly than that in the field of trade. And while Britain and Canada again led, as in 1975-89, in compliance across all issue areas taken together, the United States had moved from the bottom to the middle range.

The evidence on compliance with the commitments made at Okinawa 2000 confirms the trend (Kirton et al. 2002). Compliance with environmental and trade commitments are both very high, even if trade remains a little ahead. Most strikingly, all of the original seven members have exceptionally high overall compliance scores, with Britain and Germany leading the pack with a perfects core and the United States (with 67%) coming in last.

Causes of continuity and change

Conclusively identifying the causes of the continuity and change observed in the principles, commitments and compliance of the G7/8 in the trade-environment field requires a detailed process tracing that is beyond the scope of the current study. Yet the aggregate pattern does permit several important inferences to be made.

EXPLAINING THE PRINCIPLES OF EMBEDDED ECOLOGISM

In the realm of principles, the relative continuity and progressive elaboration of the doctrine of embedded ecologism in the G7/8, the adjustments in response to the ambitious trade liberalisation and market-oriented labour market policies of the 1980s, and the move from 1996 onward to a deeper and broader consensus on socially sustainable globalisation can be inferentially matched with several factors.

The continuity can be attributed to the close connection among employment, social cohesion and the common democratic principle at the heart of the G7/8, and to the character of the forum as one directly delivered by popularly elected leaders uniquely sensitive to the concerns of their publics. It can also be attributed, with the first generation of leaders, to the memories of the depression and the inflation that had brought Hitler to power and led to the tragedy of the World War Two. These features of the concert equality model of summit co-operation (Kirton and Daniels 1999) are reinforced by the fact that several member countries contributed to building the edifice of embedded ecologism during their years as host.

At the same time, no single country or leader proved to be consistent as a host, either in advancing the consensus or in mounting the two counter-assaults that eroded it for a time. Germany was active in 1985 and 1999, Italy in 1987, and Canada in 1988; yet each failed to maintain the momentum of trade-environment leadership in, respectively, 1992, 1994, and 1995. And the arrival of neither Margaret Thatcher nor Ronald Reagan adequately account for the addition of aggressive trade liberalisation and market-oriented labour principles.

Nor is the prevalence of a common political orientation among Summit leaders a convincing explanation. The major exception is the dominance of socialist and liberal governments in the late 1990s. This, together with the hosting of the 1999 Summit by Germany's red-green coalition, had some impact in generating the Cologne consensus that year.

Crisis, broadly conceived, offers only a limited explanation. The second oil shock of 1979 did contribute to a trade-environment linkage, but the recessions of 1981–82 and 1990–91 did not. Indeed, the first began a move to market-oriented labour policies, and the second a move toward a privileging of trade liberalisation. Most important, the move toward restoring and enriching embedded ecologism as part of the focus on globalisation began in 1996, two years before the 1997–99 global financial crisis struck. And while the Mexican financial/economic meltdown of 1994–95 constituted a crisis for the United States and Canada, it did not for the other members of the G7.

Of more importqance is the broader arena of international institutions within which the G7 operates, and the imbalances favouring economics and trade in this domain. In particular, the analytic work of the OECD (Bernstein 2000) and the operational efforts of the WTO, organisations founded and dominated by the

G7, both skewed the work of a G7 with no comparable capacity of its own. Indeed, the failure of the UNCED in 1992 to produce an environmental organisation of comparable stature to that established by the WTO in 1995 fuelled the imbalance of the early and mid 1990s, Even when the WTO's failure to strike a balance that accorded with the G7's carefully constructed principles of embedded ecologism became clear, the presence of the ILO in the broader multilateral community made it easier for the G7 to find a way to restore the desired balance in the social domain.

The causal consequence of institutional imbalance is evident within the G7/8's own structure. Here the weight of the Quadrilateral Trade Ministers forum established in 1981 and meeting several times a year, compared to an environmental ministers forum created in 1992 but institutionalised only in 1994 and meeting only once a year, provided an institutional imbalance from the start. The model of democratic institutionalism has long argued that the presence of strong institutions in the G7/8 system and in the broader multilateral community (under G7/8 control) generates compliance among G7/8 members with their collective G7 commitments (Kirton and Daniels 1999; Kokotsis 1999). This analysis suggests that such G7/8 institutions may well be equally consequential in determining the content of those commitments, and the principles and norms that guide them. Strong G7/8 institutions may be important not only in faithfully implementing G7/8 leaders' concrete commitments, but also in catalysing and constructing them, as well as the broader principles and epistemes on which they rest and those that come to predominate in the international community as a whole.

Explaining the pattern of trade and environment commitments

The pattern of strong trade but weak environmental commitments at the G7/8 prior to 1996, and the strong move towards equalisation since that time, flows from three factors. The advent of the G8 environment ministers forum can help explain the equalisation, if with a two year lag. So can the emergence of regional organisations with strong environmental and trade-environment provisions, notably the strengthened European Union and a new North American Free Trade Agreement (Kirton and Maclaren 2002). A third contributor is the growth of civil society organisations in the environmental field who have focused on the G7/8 Summit and process, and a G7/8 system which has incorporated their input and values in ever closer ways (Hajnal 2002). The successful of Greenpeace in generating the illegal logging commitment at Okinawa stands as a clear example of this trend. Within national governments, however, there are no obvious post 1996 moves toward trade-environment integration to help explain the trend.

Explaining the pattern of trade and environment compliance

In the realm of compliance, institutional imbalances and incoherence at the international and intra-national levels also offer a powerful explanation for the long-prevailing pattern. But they again do not account for the post 1996 move toward environmental equalisation. Once again G7/8 ministerial level institution building, the strengthening of environmentally friendly regional organisation, and the new contribution of environmentalist civil society are plausible determinants of the recent move, even as intra-national institutional changes are not.

Yet the data on which individual countries comply with commitments, and the dynamics of defection and bandwagoning offer additional insights into how peer pressure operates, and how over time norms might transnationally diffuse. In the most general terms, the 1975-89 Von Furstenberg and Daniels data offer four alternative explanations for compliance: reciprocity; the independence of domestic institutions dedicated to implementing commitments (even in the absence of a global crisis that galvanizes collective action), electoral politics and uncertainty (Li 2001).

Reciprocity of both a co-operative and a retaliatory sort is important, for there are few instances of free-riding and altruistic behaviour. Co-operative reciprocity depends on information about others compliance behaviour and a consensus on the extent of compliance and non-compliance by other countries. This points to the value of giving the G8 Environment ministers forum, or coalitions of ENGOs and other civil society actors a stronger role in compliance monitoring and assessment.

National bureaucracies with independent powers to implement in non crisis periods is also important. Here the challenge is to endow environment ministries with the legally-grounded prerogatives similar to the sort which trade ministries, finance ministries and central banks have long enjoyed.

Finally divided or coalition governments, or the presence of elections that enhance uncertainty about who one's G8 partners will be, tend to lower compliance. This points to the need to involve parliamentarians and opposition parties more directly in G8 environmental and trade governance as a whole.

The Kokotsis and G8 research Group compliance data, hover, cast some doubt on how important inde-

pendent national institutions, divided/coalition governments, and electoral uncertainty are. For while the first generation of compliance data had the two presidential polities of the US and France grouped together as the lowest compliers, the post 1996 data have the divided United States and coalition government Italy joining top ranked, parliamentary system, majority government Britain and Canada in the top tier.

If comparative cross national data, do not account for the recent pattern, then it is the interactive dynamics of reciprocation, and the cognitive process of consensus formation where analytic attention should rest. In exploring how such consensus is transnationally formed within the G7, the data suggest some important clues. For in the first 1975-1989 period, it was constitutionally and geographically diverse Britain, Canada and Germany who were gathered together in the high complying top tier. In the post 1996 period, similarly, it was Britain, Canada, the United States and Italy that came together in the high complying club. Thus clustering suggests that the relevant transnational networks are sufficiently powerful to transcend institutional/political and geographic barriers. It further suggests they have not yet been sufficiently strong to penetrate the French and Japanese polities and bring them into a compliance-oriented consensus.

Conclusion

While G7/8 has done much since 1975 to develop and entrench an ideology of embedded ecologism, it has long suffered from considerable slippage in translating its new trade-environment principles and norms into concrete commitments within the G7/8 and securing compliance with these commitments at the national level from its member states. Since the start of its fourth cycle in 1996, however, it has affirmed ever more strongly its embedded ecologist ideals, and seen its pattern of trade and environment commitments and compliance rise to match. These processes appear to be sufficiently powerful to override and penetrate the traditional barrier of international and intranational institutional imbalances, differently constructed national political systems, governing parties and electoral cycles, and geographic regionalism and the international institutions constructed within. They suggest that transnational alliances and learning, grounded in engaged civil society coalitions as much as national governments or international institutions, are important in diffusing the information and creating the consensus that allows co-operative reciprocity and thus high compliance to take place.

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The State Between Free Trade and Environment

by Hendrik Vos, Jeroen Decock, and Elisabeth De Zutter[*]

One of the existing concerns is "… that the legal and institutional arrangements of globalisation have themselves privileged over others –in particular the interests and values of liberal trade over distributive justice, environmental concerns, the protection of human health and safety…" (Howse 2000, 36)

During the past decade, the interaction between the multilateral trade regime (MTR) and the multilateral environmental regimes (MERs) has been a matter of growing importance in international politics. Trade and environment regimes influence each other and their provisions might clash. We argue that internationally strong environmental rules are more easily accepted if they are consistent with free trade (or do not impede free trade).

We start this article by briefly describing the characteristics of both regimes. The MTR contains coherent principles and specific norms, a centralised decision-making forum and a well-functioning dispute settlement procedure (DSP) although it lacks social legitimacy. In contrast, the MERs are decentralised, most of them do not have clear principles and norms and compliance and DSP are weak. In many ways, the MTR is stronger than the MERs. Next we focus on three related elements for the establishment and functioning of regimes: support, power and knowledge. Knowledge refers to the reservoir of (frequently) competing concepts that could serve as a framework for multilateral co-operation. Actual co-operation only occurs if a certain concept gains sufficient support within and among states. But, knowledge that is consistent with or strengthened by the ideas of actors with power-resources, is more easily accepted as a basis for international co-operation. Section four explores how environmental concerns are handled within the MTR.

In the last section the Ozone regime and the Hazardous Wastes regime are analysed. It briefly outlines the difficulties in establishing MERs and their trade restrictions (that might clash with the MTR). We assess if there is a relationship between the impact of the trade restrictions on the actual trade-flows and the effectiveness of the regime.

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The regimes

This section briefly describes the well-known characteristics of the multilateral trade regime and the multilateral environmental regimes

MULTILATERAL TRADE REGIME

The WTO or the former GATT is a centralised system with a coherent set of principles and specific norms. It is a part of and fits in a broader network of international institutions such as Worldbank and IMF. The theoretical foundation of the organisation of the international economy is the classical theory of comparative advantage developed by Ricardo. The idea or even the belief is that free trade creates welfare. Or better, trade creates economic growth and economic growth creates welfare. Consequently, the principles of the international trade regime are clear and simple with clear causal relations.

Many scholars and others have criticised the simple causality of the basic principles of the international trade regime. Firstly, free trade is disproportionately advantageous for states (or economic unities) with a strong and competitive economic performance. Secondly, historical evidence proves that today's strong economies grew up behind high tariff barriers (Moon). More exactly: tariffs were applied selectively with the aim of promoting certain sectors. Classical example are the corn laws in the United Kingdom. A third qualification does not question the causality as such, but points at the distribution of welfare: even if trade creates welfare, this does not mean that free trade eradicates poverty.

Another characteristic of the multilateral trade regime are the specific and clear norms of "Most favourite Nation" (MFN) and "National Treatment" (NT). Unequivocal guidelines for state behaviour (rules) are based on these norms.

Finally, the DSP reinforces the strength of the WTO-regime. In cases of a breach of or discussion on WTO-law, Members can take recourse to the DSP. If there is a breach of law and the Member refuses to comply, retaliation measures can be authorised by the Dispute Settlement Body (DSB). This means that an important problem of international co-operation is resolved: non-compliance is still possible, but there is a mean to enforce WTO-law.

However, problems arise in the DSP. In different rulings, discussion arose on the extent that the existing WTO-treaty limits the policy-options of the members. Specific cases that were linked to public health (e.g. WT/DS26 and WT/DS48) and environment (WT/DS58 and WT/DS61) caused protest. The cases and the reaction of the general public prove a lack of social legitimacy of the WTO, though the formal legitimacy is respected. Formal legitimacy is defined as ratification of WTO according to the constitutional arrangements of the Members. As Robert Howse writes "…formal legitimacy of this kind rarely provides closure on the issue of whether those affected by a decision can fully accept it as a legitimate outcome—as Joseph Weiler argues … social legitimacy is distinct from, and certainly not exhausted by, formal legitimacy" (Howse, 37) In general the critic is that by creating a strong international trade-regime, governments "tie their own hands" and consequently elevate free trade to a nearly "constitutional" level because it is difficult to change a treaty or to negotiate a new one.

A general remark we want to make is that the aim of international co-operation is enactment of or at least some agreement on prescriptions and proscriptions for state behaviour in a given issue-area. This implies that the co-operating states agree on limitations to their sovereignty. The WTO regime is successful in attaining this. This effectiveness, however does not result in a social legitimacy, mainly because of conflicts among the principles and norms of the WTO-regime and the (emerging) principles of other regimes such as the ERs.

MULTILATERAL ENVIRONMENTAL REGIMES

The international environmental governance structure, which has evolved over the last decades, lacks a general concept and has no central principles. We do not ignore the concept of sustainable development (SD) that we see as an emerging principle. The formulation of SD is the result of difficult diplomatic negotiations at the Rio Conference (1992). As a consequence, the phrasing of SD is deliberately ambiguous: it stands as much for the subordination of environmental policies to economic imperatives as vice-versa. SD in its present formulation can not serve as a general concept for the organisation of the MERs or as basis for unequivocal norms.

The current situation is characterised by this lack of central principles. The governance-structure evolves from a multitude of separate MERs with today more than 500 multilateral environmental agreements or other agreements. Each is negotiated separately, around specific environmental problems. Another effect of the conceptual mess is that the constituent parts do not have well-defined roles. Formal linkages between the different multilateral environmental agreements are rare. The result is a confusing set of idiosyncratic international regimes, lacking common principles and common political and management-bodies. Broader linkages among issue-areas, such as debt-relief or market-access, are non-existent.

Thus, it is not surprising that no single forum for multilateral environmental negotiations exists. The international environmental governance structure, lacks a strong international organisation with a clear mandate and a stable, predictable and adequate budget. Although UNEP, as the only UN body with environmental protection at the heart of its mandate, had some successes as catalyst of multilateral environmental agreements, it is not able to play a gravitational role for international environmental policy. UNEP is not a specialised agency, but a programme and therefore it lacks authority within the UN system. It has an unpredictable and small budget. Recently, under the leadership of UNEP's Executive Director, Klaus Töpfer, some organisational reforms are undertaken and some interesting initiatives are initiated, such as an intergovernmental dialogue on international environmental governance.

Many proposals for norms and principles in the environmental issue-area exist today. But, the political-diplomatic compromises, necessary for consensus in international negotiations, created unclear and weak soft law. In most cases, multilateral environmental bargaining results in non-binding agreements or lowest-common-denominator binding agreements containing deliberate ambiguous language (cf. definition of "wastes" in the Basel Convention). Potentially strong norms such as "polluter pays" or "precaution" suffer from the same fate: they usually get bogged down in non-binding policy documents

The MERs normally have weak compliance provisions. In general compliance is difficult to assess in the environmental issue-area. Monitoring of compliance is often limited to self-reporting. In general, the reporting rates and the quality of the reports is low. In some cases, a double-check with information from another source exists, e.g. information from TRAFFIC International in the CITES-regime. DSP and enforcement measures are weak if present at all.

International regimes: Three conditions

In this preliminary testing of the hypothesis, we will look at three conditions. First of all, a prerequisite for

the existence of international regimes in trade and environment is the availability of a concept, an idea or knowledge about how to organise the international trade relations and the protection and management of the environment. Secondly, in international politics power is a conditioned, but existing factor. Thirdly, the support for the regime within a state and among states is essential. Many concepts serve only the interests of a small group (e.g. the Multilateral Agreement on Investment that served especially the interests of Transnational companies (TNCs)). In the case of WTO and many multilateral environmental agreements, most states must perceive the basic concept of the regime as beneficial for themselves. In short: a condition for an international trade or an environmental regime is a (perceived) basic consensus on ideas that serves as a framework for the negotiations and supported by an agreement among the powerful without strong opposition of other states or groups on the content of regime.

Knowledge/ideas, power and support have a dynamic relationship. A concept or another form of knowledge must gain support within and among states. Knowledge consistent with or strengthening the ideas of actors with power-resources is more easily accepted as basis for international co-operation, although it needs sufficient support. "Consensus" combines the three elements: it is broad support within and among states combined with approval of actors with power-resources and based on a (general) concept. Now we will discuss the three elements separately.

"BROAD SUPPORT"

Important for the support for a certain idea or concept of the organisation of the international economy (trade) and international environmental management, is the distribution of costs and benefits within and among states (Putnam 1993[1987], 446; Evans 1993, 400,412-414).

Costs and benefits of international co-operation are not (always) equally spread among different groups in society within a state. Consequently, lack of co-ordination, international co-operation or non-compliance have different effects on these groups. Therefore, even when in general co-operation would be beneficial, no co-operation is attained because of the opposition of groups with specific interests, i.e. specific benefits (an identifiable group of beneficiaries) and specific costs (no discussion on who "pays"). There are several possible combinations of cost- and benefit-distribution. In case of specific costs or specific benefits, the groups concerned will try to influence state-policy.

The interests that states formulate on the international level are partially the result of the internal cost-benefit calculations. If a state changes its preferences on the international scene, an internal change often preceded the change in the formulation of preferences (Goldstein; Keohane, 1993, 26). On the international level, support for an international regime in general or for some rules of the regime can also change. An example of the latter situation is the discussion on drugs and intellectual property. US-based pharmaceutical TNCs urged their government to push for rules concerning intellectual property within the GATT-structure (Woolcock 1999, 31-32). At this point, the preferences of the US were based on internal support and was accepted internationally. At Doha, several developing countries asked for new rules, because their interest were negatively affected by the rules of the Uruguay round. The EU support the developing countries (Lamy 2001), partly because of their own public opinion (to whom they are responsible). This means that the existing agreement lacked support within some developing countries and in the EU with as result the "Declaration on the TRIPS Agreement and Public Health" at the Fourth Ministerial.

Environment gives us examples of how non-material values also affect the cost-benefit calculation. If there is a direct threat to human health or the problem appeals strongly to collective emotions, for instance whales or panda-bears, public opinion is mobilised for environmental causes. Political effective environmental groups often focus their activities on this kind of hot issues. Even if environmental regulation causes less material welfare, other aspect of the well-being such as emotions and health, are enhanced.

However environmental concerns are in general not perceived as generating benefits, diffuse nor specific. Therefore, sound environmental policy can only be realised if there is a broader support or if the need for such a policy is accepted by the political elite.

"..ESPECIALLY AMONG THE POWERFUL .."

States can—theoretically—not be forced to accept decisions made by actors outside the state (or outside the state-apparatus). In international law, the norm of sovereignty is central and fundamental. In practice however some states are more equal than others and the power of states is not equally spread among all issue-areas.

Although power is an important factor in international politics, we will use in this article a rather "thin" definition of power as to avoid confusion. Power is a conditioned, but existing factor in interna-

tional politics. It is especially "conditioned" in issue-areas where international co-operation exists. The policy-options of the states are then limited by the pre- and proscriptions for state-behaviour or the behaviour of actors under their control. But, it is impossible to ignore power in international relations: power can influence the relations in a norm-guided environment and in international negotiations. An example are the trade relations. The economic strength of some WTO-members can be important in the DSP: retaliations of EU versus US or vice versa are strong threats. Retaliation of say Costa Rica versus EU is not that impressing, the other way round can be devastating for the economy of Costa Rica. This does not mean that states with weak(er) economies are without any rights in the international relations. Several cases of developing countries versus developed countries had positive results for the developing country (e.g. WT/DS58 and 61).

Power is a factor of importance, but a complex one. We use "power" in this article only in the following terms: (1) a state or a coalitions of like-minded states that have the possibility of linkages within or beyond issue-areas and (2) a state or coalitions of like-minded states that is a veto-player in a particular issue-area. In both cases the actor concerned can use its economic resources as leverage.

An example of the use of power in the issue-area trade. Large trading blocks are more important in the multilateral trading system. Within the negotiations, the smaller economies have some power: they can refuse further negotiations or the result of negotiations. In this case, they are veto-players. An example of this is the position of the developing countries during the Third Ministerial Conference of the WTO in Seattle. The multilateral trade regime with its present efficiency in terms of realisation of free trade is not hampered by this: the existing "machine" continues to function. An example of possible linkage is the "Everything But Arms Agreement" (EBA). This agreement gives some 49 Developing Countries duty-free access to the EU market. Given the economic strength of the EU, the agreement provides the EU with a potential leverage vis-à-vis these developing countries.

"… WHO SHARE A COMMON IDEA"

A third condition for change in the organisation of the international economy and management of the environment is knowledge or ideas. "World views and principled beliefs structure people's views about the fundamental structure of nature of human life … and of the universe …" Causal ideas help with the selection of the means to reach a desired goal (Goldstein, Keohane, 1993, 13-14). We will not use this categories, but the following ones: a general concept, concepts, scientific evidence and non-scientific evidence. Producers of knowledge are often non-state actors. Especially in the case of environment, NGOs such as WWF and Greenpeace are important. Furthermore, financial resources are needed to produce knowledge and ideas. We will see that the US invested in research to convince its partners of the relationship between the CFCs and the thinning of the ozone layer. Evidence in the case of the Basel convention was created by Greenpeace with reports on illegal shipments of hazardous wastes, because developing countries did not have enough resources.

A general concept is: a definition of the situation, the causality, an evaluation and possible solutions. An example is the free trade logic that is based on the theory of comparative advantage. Concepts are less comprehensive. It is rather the definition of a problem or a specific problem and its solution.

Non-scientific evidence is the evidence produced by NGOs or other advocacy-coalitions to support their demands. For instance in the drugs—intellectual property case, the situation in South-Africa and the case against the South African state by some pharmaceutical companies, functioned as factual evidence in an ongoing discussion on intellectual property within the WTO.

The impact of scientific evidence on international co-operation is also a part of "knowledge". Particularly in the case of environmental regimes scientific evidence is important. Strong scientific evidence is not a sufficient factor, but enhances the chances for co-operation (Hasenclever 1997, 149-152). One remark we would like to make on the topic of scientific evidence is that if scientific evidence is incompatible with a dominant general concept or conceptual framework, it is not easily accepted.

In some rare cases, scientific evidence can act as a "smoking gun" (e.g. the "hole in the ozone layer") putting severe domestic pressure on governments to elaborate a strong and effective regime. As long as there is discussion on the scientific evidence, decision-makers can chose the scientific evidence that suits best their interests and/or ideas and these of their constituencies. This is a known problem in the environmental issue-area.

Co-ordination of trade and environment

The relationship between trade and environment is a problematic one. Several scholars would disagree with

this statement (cit. of Worldbank and GATT in Brack, 1999, pp.134-135) or wonder if it is worth noting it (Van Calster 2001). As mentioned before, we state that environmental concerns can be realised in the WTO. There is an important qualification: the environmental concerns can only be realised if they do not go beyond free trade. First, we discuss the regulatory relation between trade and environment. Secondly, we look at how the two live together under the WTO treaty. Thirdly, we discuss the relation of the WTO and multilateral environmental agreements.

There are several situations where regulations on trade and on environment meet. Examples are the national environmental regulations that affect trade. Some can have territorial application, other have application. Regulations concerning production and process methods (PPM) and national regulations aimed at the protection and management of common goods are regulations with potential extraterritorial application. Eco-labelling and life-cycle approaches (sustainability assessment from production to consumption) are examples of PPMs. The national regulations that forbid the use of aerosol sprays are examples of national regulations with the aim of protecting a common good, the ozone-layer. On the multilateral level are Multilateral Environmental Agreements (MEA) that make use of trade measures or that affect trade. (Brack, 1999, 134-139)

The WTO-treaty mentions environment and sustainable development on several occasions. We will not discuss the treaty-provisions in extenso. Some parts of the WTO-treaty are of special significance for the relationship between trade and environment. The parts concerned allow exceptions on the MFN- and NT-norm. First of all, there is the preamble of the WTO treaty stating "…while allowing for the optimal use of world resources in accordance with the objective sustainable development". The preamble however can not be invoked in disputes, but "informs not only the GATT 1994, but also the other covered agreements" (WT/DS58/AB/R, §129). Secondly, article XX constitutes a general exception for (b) protection of human, animal and plant life and (g) conservation of exhaustible resources. The Panel and Appellate Body of the WTO applied this article in a legalistic and formal way.

The Agreement on Sanitary and Phytosanitary Measures (SPS agreement) and the Agreement on Technical Barriers to Trade (TBT agreement) are also relevant to the trade-environment relation. The former concerns measures for the protection of human, animal and plant life and health. The latter concerns technical regulations and standards and conformity assessment procedures. The environment-related cases of the DSP, show the importance of these parts of the WTO-treaty. (We only mentioned the most important parts of the WTO, for a general overview, see: WTO, WT/CTE/W/191, 18-26).

The discussion has now to focus on the restrictions on the exceptions on MFN and NT. More in general, what room leaves the WTO for environment? The chapeau of art. XX states that the general exceptions "…are not applied in a manner which could constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction of international trade". The TBT-agreement has similar provisions in artt. 2.2 respectively 5.1.2: "Members shall ensure technical regulations" resp. "conformity assessment procedures are … not…creating unnecessary barriers to trade". And art. 2.3 of the SPS agreement states that Members must ensure that SPS Agreement measures are "not arbitrarily or unjustifiable discriminate" and are "not a disguised restriction on trade".

The Appellate Body has nevertheless stated the following: "…WTO Members are free to adopt their own policies aimed at protecting the environment as long as, in so doing, they fulfil their obligations and respect the rights of the other Member under the WTO Agreement." (WT/DS58/AB/R, §186) This means that the WTO respects the sovereignty of the Members and guards the rights and duties of the Members under the treaty. In this view the rules are only some procedural requirements. From another point of view, the situation is quite different.

PPM and eco-labelling are often cited as examples of environmental regulations that are restricted by these "procedural" limitations (Brack 1999, 135-137; Neumayer, 23-27). But, why are PPM and eco-labelling so problematic? There is no problem whatsoever when a state implements PPM-rules for firms and producers within its territory. Also if the consumption on the territory of the regulating state is limited because of environmental concerns, the state is free to do so. The whole idea becomes a lot more controversial once PPMs are applied to imported products that are "like products". Products are "like products" if they have the same physical characteristics. PPMs are not an intrinsic part of these physical characteristics. (Brack, 1999, 135-137)

If a state regulate PPMs beyond its borders, it infringes upon the sovereignty of another state. Van Calster argues that the cases on PPMs (e.g. Shrimp) are discussions on the respect of sovereignty: extraterritorial authority endangers the rule of law in the international relations (Van Calster, 293-294). On the basis of his sovereignty-argument he proposes multi-

lateral environmental agreements as solutions. They are the only way to meet environmental concerns in respect of sovereignty (Van Calster, 297). This legalistic reasoning is to be discussed within the community of international law specialists. We are not convinced that this legalistic reasoning is neutral. What is important for our argument is that the existing organisation of international law gives the WTO–regime a preponderance on the emerging environmental regime(s). States have agreed on the principles and norms of the WTO and this regime is supported by the dominant concept of free market economy. In contrast, existing multilateral environmental agreements are weak and many environmental problems are not covered by an MEA.

Although multilateral environmental agreements take into account the sovereignty requirement of international law, another problem would arise: the discussion on the priority rule. Stökl discussed the priority rules between the Biosafety Protocol and the WTO (Stökl 2001, 334-342). In this particular case, the wording of the preamble organising the relation with trade is the result of a diplomatic compromise. The final wording is a rather confusing text that gives no guideline what rules have priority.

For the existing multilateral environmental agreements, there exists in the opinion of Neumayer a potential for a clash between trade measures employed in multilateral environmental agreements and WTO rules. He does not suggest a wait-and-see position. He makes a set of recommendations to anticipate such a clash. The range from the addition of an environmentalist to the Panel or AB, a temporary waiver an amendment to the GATT or an list of multilateral environmental agreements that the Members see as overruling the WTO (Neumayer 2001, 173-180). The latter suggests that free trade must yield for environmental protection and management. Although we doubt on this procedure because of the weaknesses of most multilateral environmental agreements and the "priority rule"-problem, the idea of multilateral environmental agreements overruling the free trade logic is important.

The bottom-line is that stronger multilateral environmental agreements and a stronger environmental regime are a first step to balancing the different values of free trade and environment. Now we will look at two multilateral environmental agreements that affect trade and have trade-measures. We look at the impact of the multilateral environmental agreements on free trade as one of the possible factors of success or failure in the creation of effective multilateral environmental agreements.

Cases

The analyses of the ozone regime and the Basel regime illustrate the difficulties in agreeing multilateral environmental agreements. The regimes cannot be seen as representative. One reason is that many environmental problems are not covered by multilateral environmental agreements by lack of consensus. The ozone regime is regarded as one of the strongest MERs. The Basel regime effectively eliminates the worst forms of waste dumping in developing countries, but is not regarded as an effective tool for the reduction of hazardous wastes (HWs) generation. Both regimes make use of trade restrictions that might clash with WTO rules.

In both cases we analyse how the regimes emerge or try to emerge and how the factors power, ideas and support influence this process. The prospected influence of the regulations on trade-flows is a part of the explanation for the situation of the Basel and Ozone regime.

THE OZONE REGIME

The ozone-depleting capacity of chlorofluorocarbons (CFCs) was hypothesised for the first time in 1974 and by 1982 the issue came on the international bargaining agenda, although final scientific proof was lacking. The United States (US), Canada and the Nordic States formed a lead coalition (the so-called Toronto Group) that called for binding international obligations to reduce the use of CFCs. The European Community (EC) and Japan formed a veto coalition that opposed such obligations. The result of this first round of negotiations was a framework convention (Vienna Convention for the Protection of the Ozone Layer, 1985), which lacked binding obligations, but contained an agreement to negotiate a separate protocol.

During the preparations of the Montreal Protocol, the Toronto Group proposed a 95% reduction of CFCs. The EC, supported by the Soviet Union, opposed this reduction and proposed a production cap. At the end of the negotiations, the EC veto coalition changed its initial position and accepted to halve the 1986 CFC production by 1999.

Then, in 1989, the EC shifted its position dramatically by completely giving up its veto role. This made the London Amendment to the Montreal Protocol (1990) possible. The London Amendment required the complete elimination of certain CFCs, halons and methyl chloroform. The list of ozone-depleting substances (ODSs) has been expanded by the three subsequent amendments to the Montreal Protocol since then (1992 Copenhagen Amendment; 1997, Montreal

Amendment; 1999, Beijing Amendment) while regulations were made stricter and timetables shorter for already controlled ODSs.

So, which elements shaped the positions of the states during the different bargaining rounds? Why did the US take the lead and why did the EC made a U-turn?

Ozone-depletion is caused by the emission of a limited number of chemicals (ODSs). The sources of emissions of ODSs are now well known and limited: industrial processes controlled by TNCs located in industrialised countries. The substitution of ODSs by less or non-depleting ODSs can yield high environmental benefits. This knowledge about causes, effects and solutions was not uncontested until the end of the 80s. During the Vienna and the Montreal negotiations, the EC could still legitimise its veto-position by questioning scientific evidence. In 1988, after the publication of a report by some 100 leading atmospheric scientists, the argument of scientific uncertainty was no longer credible. In other words, cumulative scientific knowledge had the effect of a "smoking gun".

But, this knowledge factor needs to be put in perspective. The large investments of the US in scientific research and the advocacy-coalition with UNEP, contributed to the development and spread of knowledge. So, one can argue that the development of international knowledge is partly explained by the economic resources the US was able and willing to invest.

The domestic economic consequences explain to a large extent the positions of the states during the ozone negotiations. The fact that DuPont, the biggest CFC producing company in the US, had a competitive advantage over the European producers for CFC substitutes is certainly one element that explains support by the United States for a strong regime. The other way round: fear of competitive disadvantages explained to a large extent the veto-position of the EC. Former UNEP Executive-Director Mostafa Tolba, who played a key role during the Montreal negotiations stated that the "difficulties in negotiating the Montreal Protocol had nothing to do with whether the environment was damaged or not. It was all about who was going to gain an edge over whom; whether DuPont would have an advantage over the European companies or not" (cited in Rowlands 1998, 11).

Similarly, the 1989 EC U-turn (when the EC changed from veto-player to lead-player) can be explained by a redefinition of the interest of its chemical industry: "After DuPont (..) began to reinforce research on substitutes in 1986, it became clear to other multinational companies that the global CFC market would change and that the ability to produce substitutes was necessary to maintain market shares" (Breitmeier 1997, 107).

But, domestic economic cost/benefit calculations do not entirely explain the positions of the states: the domestic political situation must be taken into account. For example, the ozone issue came at an earlier stage on the political agenda in the US, Canada, Norway and Sweden than in most of the EC countries. In the US, early scientific evidence of the ozone-depleting capacity of CFCs was followed by a lively domestic debate and a consumer boycott that caused a decrease in sales of CFC products (Breitmeier 1997, 101). This domestic action in turn resulted in the restriction of CFCs in aerosol sprays. So, because of the domestic pressures and the domestic CFC regulation, the US became an active player in the international agenda setting of the ozone-depletion issue.

Another example is West Germany, whose position in the negotiations strongly reflected the domestic public and political pressures. Although West Germany was the largest producer of CFCs in the EU, it was an early supporter of a strong international regime. The remarkable electoral progress of the Green Party is certainly one reason for this position. German industrialists feared domestic measures that would disadvantage their economic position. By supporting a strong international regime, the "misery could be shared" (Rowlands 1997, 14).

Ozone depletion is a 'Northern' problem. The developing countries did not play an active role during the early ozone negotiations, since they produced less than 5% of the world's CFCs. But, their expected increase in production and consumption made their inclusion necessary in order not to undermine the ecological effectiveness. Once the EC supported a strong regime, the developed countries used their power to provide the Montreal Protocol with several incentives for developing countries to join the regime.

First, compared to the commitments of the industrialised countries, reduction targets are less stringent and phase-out periods are longer for Article 5 countries. Second, financial assistance for Article 5 countries is available via the Ozone Fund. The Ozone Fund is supported by contributions of the industrialised countries and intended to finance extra costs of compliance. Third, the restrictions on trade with non-parties encourage non-members to join. The Protocol bans import and export of controlled substances between parties and non-parties (unless the non-parties can demonstrate that they comply with its

obligations). The protocol also bans the import of products containing controlled substances from non-parties (Neumayer 2001, 162-163). In addition, the protocol required considering the restriction of imports of products made with, but not containing controlled substances. The parties decided that such restrictions were technical infeasible (Parson 1996, 22; Neumayer 2001, 163). Duncan Brack suggests that probable inconsistency with the WTO rules was an additional motive to drop the requirement (Brack 1996, 54).

The ozone regime is regarded as one of the most successful MERs. Ecological effective norms are based on uncontested scientific knowledge agreed upon by the powerful states, with the support of their industries (special interests) and public opinion (diffuse interests). Developed countries use their power resources to reward developing countries that become member of the regime (via the Ozone fund) and to punish non-parties (via trade-sanctions). In the end, most developing countries are better of as insider than as outsider.

THE HAZARDOUS WASTES REGIME

In the late 1980s, shipments of hazardous wastes (HWs) from developed to developing countries, lacking the capacity for save disposition, were brought to the attention of the international community and spurred international negotiations for a regime on HWs. The negotiations started in 1987 and resulted in 1989 in the "Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal". The Basel Convention did not prohibit the North-South exports of HWs, but contained norms to regulate these exports. Unsatisfied with this outcome, a majority of developing countries kept on pushing for a prohibition of North-South exports.

In 1992, the first Conference of the Parties (COP 1) agreed on a partial ban on North-South exports, exempting HWs destined for recycling (Decision I/22). In 1994, COP 2 approved a full ban (Decision II/12). In 1995, COP 3 agreed to amend the text of the convention in order to include the full ban (Decision III/1). This so-called "Ban Amendment" is not yet into force because it lacks the necessary amount of ratifications.

During the Basel negotiations, a coalition of developing countries called for an international ban on North-South exports and for export-state liability in the event of illegal export. The exporting countries were only willing to accept a regulated trade, based on "prior informed consent" (PIC), an idea developed within the OECD: "The veto coalition gave the waste-importing states a choice: accept an informed-consent regime or get none at all" (Porter et al. 2000, 105). It was only after intense debates within the Basel regime that the exporting countries gave up their veto-position and accepted the "Ban Amendment". Some exporting countries (like US, Australia, Canada, United Kingdom, Germany) still try to undermine the implementation of the ban by creating technical and legal loopholes (Pucket 1997).

The power of the exporting states as a veto coalition stems from the fact that their industries produce and export HWs. This power stems also from the weakness of most developing countries, because they do not have the capacity to enforce unilateral import bans. The fact that the exporting countries finally gave up their veto-position is partly explained by the unified position of a very large majority of developing countries. This is demonstrated by: (a) several regional agreements banning HWs (e.g. Bamako Convention (1991) and the Waigani Convention (1995)); (b) a growing number of national bans on the import of HWs (88 by 1992; more than 100 by 1994); (c) inclusion of an import ban in Lomé IV between ACP countries and the EC (1989).

Domestic economic interests explain to a large extent the opposition by the veto-coalition. A tightening of environmental regulations in the industrialised countries during the 1980s made exports of HWs to developing countries cheaper than waste-prevention, cleaner production methods and safe domestic disposal. In addition, a globalised recycling industry (associated in the Bureau of International Recycling, BIR) lobbies governments in both OECD and non-OECD countries (e.g. India, Brazil, Philippines and South-Korea) to weaken the trade ban on HWs destined for recycling (Pucket 1997). In contrast, he public opinion in exporting states generally supports an export ban. These diffuse green concerns counterbalance to some extent the specific economic interests. However, this relies heavily on information provided by the media and non governmental organisations.

The developments within the Basel regime were also influenced by knowledge. Greenpeace fed the negotiations at crucial phases with compromising information. At COP 1 Greenpeace publicised a report containing evidence about more than 1000 cases of illegal HWs exports. At COP 2 Greenpeace delivered compromising evidence on HWs used for recycling (the so-called "sham" recycling and "dirty" recycling) which delegitimised the partial ban agreed upon at COP 1.

The strong opposing positions of the lead-coalition and the veto-coalition have some important consequences for the outlook and the performance of the Basel regime.

First, there still exists a wide gap between the objectives and the actual rules. The former are (a) to minimise the transboundary movements of hazardous wastes; (b) to dispose these wastes as close as possible to the source of generation; and (c) to minimise the generation of wastes. The rules are until today only controlled trade (PIC) and a controversial and not yet legally binding ban. The Basel regime does not contain e.g. quantitative waste reduction targets, nor rules to achieve this. This would imply a costly restructuring of production-processes and limit a lucrative trade.

Second, after the veto coalition failed on the diplomatic terrain, it sought to create technical and legal loopholes in the export-ban (Pucket 1997). Attempts were made to redefine definitions of wastes and HWs. Hence, the weakness of the treaty and the amendment becomes clear: there is ongoing discussion on the definition of central concepts. Only in 1998 list of HWs were accepted at COP 4 that classify wastes as hazardous (Annex VIII) and non-hazardous (Annex IX). This makes the Basel construction confusing because the Convention had from the beginning lists in its Annex I defining what are hazardous wastes and an Annex III describing characteristics that make wastes hazardous (e.g. if a waste is inflammable). Another discussion is what kinds of wastes can be defined as goods or secondary raw materials. Also recyclables are under discussion. Finally, Annex VII (containing a list of countries falling under the export-ban. Currently only OECD countries, EU countries and Liechtenstein) is attacked. Another attempt to undermine the ban is that opposing states want to being allowed to conclude separate export-agreements with non-parties. Until now, attempts by the veto coalition to undermine the ban largely failed. A result however, is an increasingly complex and unreadable treaty.

Finally, some additional elements illustrate the weakness of the regime: (a) inadequate monitoring and insufficient information on transactions of HWs; (b) HWs trade between parties and non-parties that do not comply with the Basel Convention is technically still possible (Krueger 1999, 45-46); and (c) no fund for capacity building comparable to e.g. the Ozone Fund is available.

Conclusion

The clear evidence on an environmental problem and a solution that yield high environmental benefits are present in the ozone regime (phasing-out of ODSs) and to a certain extent in the Basel regime (minimising the production of HWs). The ozone-regime contains detailed norms and rules to implement its objective. In addition it contains effective sticks and carrots for joining the regime. In contrast, the most potent measure under the Basel regime, the ban on North-South HWs exports, is formally adopted, but not yet in force and still under attack. While the ozone regime has the support of all the powerful states (and their public opinions and industries), this is not the case for the Basel regime. In the OECD countries, specific interest groups oppose the export ban and green interests do not counterbalance these. In addition, some developing countries (today mainly Asian countries) now support the position of the OECD export countries. An implementation of the export ban would mean the stopping of a lucrative trade in HWs.

In the case of the Basel regime the powerful states, supported by their industries, perceive the export ban as a trade distortion rather than a measure to implement the objectives of the regime. In the case of the ozone regime the powerful players, supported by their industries, see the trade measures as a tool to prevent free riding by non-parties. The trade measures do not have an impact on the trade flows of the members of the regime.

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