Millennium Ecosystem Assessment: Understanding response strategies for ecosystems, ecosystem services and human well-being

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Ecosystems are capital assets!

RWG will assess how to manage these assets sustainably.
What can we do to enhance well-being and simultaneously conserve ecosystems?
Stresses on ecosystems

- Exotic species
- Management practices
- Climate
- Air pollution
- Extreme events

Non-Sustainable

- Decline in productivity
- Change in nutrient cycling
- Reduction in size of components
- System retrogression
- Changes in species diversity
- Reduced carbon storage

Sustainable

- Resilience
- Continued carbon sequestration
- Equilibrium among supply/demand of essential resources
- Trophic network integrity
- Physical and biotic stability
- Diverse and seral stages and structure

Desirable response options

- Biodiversity
- Productivity
- Carbon cycle
- Water conservation
- Soil conservation
- Vitality

Vitality

Soil conservation

Water conservation

Carbon cycle

Productivity

Biodiversity

Desirable response options
Conceptual Framework
Inventory matrix of response options

Regional level

Forest management
Food security
Fresh water management
Biodiversity conservation
Urban planning
Climate change

Response options

National level

Economic interventions
Legal interventions
Institutional interventions

Regional cooperation & policy integration
Information dissemination & education
Regulation & compliance

Local level

Issues

Synergies & trade-offs
The fellows
Decision-making Frameworks

Measurement (repeated acquisition of quantitative data)

Analysis of options

Choice of actions/policies

Information to and feedback from stakeholders

Implementation

Evaluation of policies

Identification, analysis and advocacy of issues
The drivers discussion between ecologists, geographers and economists

Economist: People are not driven, people make choices!
Resulting in a much stronger focus on decision making process
The CF focuses on decision makers and processes.
Structure Responses Working Group

Part I: Conceptual Framework for Evaluating Responses
- Typology of responses (legal, institutional, economic, technical, ecological)
- Methodologies to assess responses
- Uncertainties in the effectiveness of responses

Part II: Assessment of Past and Current Responses
- Biodiversity
- Food, fiber, fresh water, fuel
- Nutrients, waste, climate
- Cultural services
- Integrated responses

Part III: Synthesis: Ingredients for successful responses
- Poverty reduction
- Health
- Choosing responses
- Millennium Development Goals
Major preliminary findings

✓ Large differences between developed and developing countries
✓ The effectiveness of responses are context specific, i.e. there is no single recipe to halt ecosystem deterioration and increase human well-being
✓ Linkages between policy issues are important (e.g. climate change, biodiversity and development issues)
Preliminary Sectoral Messages

1. **Water**: Significant opportunities to avoid future water crises exist in areas of improved design and management of water infrastructure, more inclusive and integrated governance and more efficient resource allocation through market-based approaches.

2. **Forests**: Strategies to improve the impact of forest product use on ecosystem health and human well-being are more affected by decisions taken outside the forest sector than those within it.

3. **People and Ecosystems**: Policies and Economic Incentives concerning management systems and conservation strategies that separate people from their environment, freezing both cultures and ecosystems have limited success......

4. **Key challenges** in the development of effective response strategies arise out of limited knowledge on the complexity and variability of site-specific factors, which determine outcomes and costs.
Integrated responses (IR) are gaining in importance in both developing and developed countries but they have had mixed results.

IR are responses that address degradation of ecosystem services across a number of systems simultaneously, or that also explicitly include objectives to enhance human well-being. IR occur at different scales and across scales, and use a range of instruments for implementation. Increasingly they are associated with the application of multi-stakeholder processes and with decentralization, and they may include actors and institutions from government, civil society and private sector.

Examples include some multi-lateral environmental agreements, environmental policy integration within national governments, and multi-sectoral approaches such as Integrated Coastal Zone Management.

Although many IR make ambitious claims about their likely benefits, in practice the results of implementation have been mixed in terms of ecological, social and economic impacts.
Millennium Development Goals

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria, and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development
Making the difference!
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