

The First 10 Years

By Udo E. Simonis

Times of change are times of chances. And so it was when after German re-unification the question arose of where to preserve scientific capacities and where to build new ones, and more so, how to meet the new challenges that were in need of first class science.

Climate research had quite a tradition in both East and West Germany. Climate impacts and global change, however, were still largely unexplored. The decision then to establish an innovative research institute in Potsdam was, probably, an easy one, in reverence for the *genius loci* of that historic center of research. To define the tasks of the new institute was not that easy.

The promoters in the ministries in Bonn and Potsdam, however, had a good idea. They wrote an elemental paper and appointed a founding committee, with experienced administrators and renowned academicians, both

from the natural and the social sciences. The new Potsdam Institute for Climate Impact Research (PIK) was thus destined to become an inter-disciplinary and policy-oriented research institution of high international reputation.

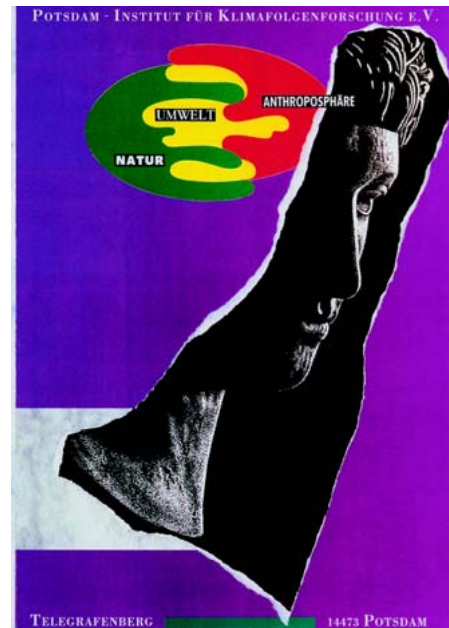
Basically, the founding members discussed Gilbert F. White's suggestion that the future condition of the globe's interlocking natural and social systems might depend more on human behaviour than on the further investigation of natural processes. Thus a strong social science component was agreed upon, intensive debates on the institute's concept and projects started, and the prompt appointment of a brilliant, imaginative director and prominent leading scientists helped to get things going.

Personally, I do recall the struggle with Klaus Hasselmann who, at that time, did not think that the social sciences had much to say on climate impacts. My repeated hints on the role economists – and rather conservative ones at that! - played in US climate research, made him think twice and, later on, he became a respected speaker at international economic institutes ...

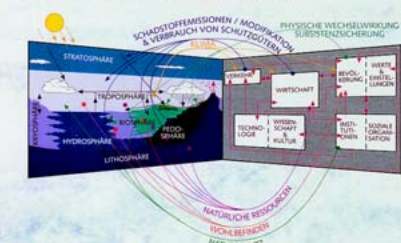
The institution's further evolution was, of course, not without struggle and battle on resources, location, appointments, and even on the name and its logo. In historical perspective, however, such contests appear as stimulating and constructive; the Board of Trustees was a reliable and determined guard.

In the minutes of the very first meeting of PIK's founding committee two specific features had been stressed - integrated scientific assessments and innovative societal functions: The challenge, it said, is to develop solutions for highly complex man-nature interactions, to coordinate those solutions and to bridge the gap between theoretical modelling of processes and practical implementation of policies.

1991 July	Recommendation of the Wissenschaftsrat (German Science Council) to establish an institute for climate impact research
1991 October	First meeting of the Founding Committee of the Potsdam Institute for Climate Impact Research (PIK), a registered society (e.V.) in Potsdam
1991 December	Inaugural meeting, establishing the statutes of the institute and appointing H.J. Schellnhuber as its Founding Director
1992 January 1	Official foundation of PIK by the German Federal Ministry of Science and Technology and the Ministry of Science, Research and Culture of the State of Brandenburg
1993 April	Inauguration of PIK's provisional building on the Telegrafenberg in Potsdam - departure from the offices in Berlin
1994 February	Constituent assembly of the international Scientific Advisory Board of PIK
1994 November	Inauguration of PIK's first parallel supercomputer IBM RS 6000 SP by Manfred Stolpe, Prime Minister of the State of Brandenburg
1998 October	Institute review by an evaluation committee of the Wissenschaftsrat to result in an expert report
2001 October	10 years of PIK - inauguration of the new main building and the new high-performance computer during the First Sustainability Days



AUFTRAG UND CHARAKTER DES POTSDAM-INSTITUTS FÜR KLIMAFOLGENFORSCHUNG



Am Anfang des 2. Jahrtausends v. Z. steht die Wissenschaft vor einer neuartigen Aufgabe: beispiellos komplex. Es gilt die Ursachen, Mechanismen und potentieller Auswirkungen der sich bereits vollziehenden globalen Umweltveränderungen zu erforschen sowie Wege zu einem kausalfestem Gleichgewicht zwischen Natur und wachsender Zivilisation aufzuzeigen. Im Bewusstsein der Bedeutung dieser Fragestellungen und der Dignität von Völkergemeinschaften haben der Minister für Wissenschaft, Forschung und Kultur des Landes Brandenburg und der Bundesminister für Forschung und Technologie gemeinsam beschlossen, einer Empfehlung des Wissenschaftsrates zu folgen und eine spezielle Forschungseinrichtung zum Thema "Globaler Wandel" zu schaffen. Das Potsdam-Institut für Klimafolgen-

forschung e.V. (PIK) ist 1992 als Institut für die Blaue Liste gegründet worden und soll zunächst am Modellfall globaler Klimaveränderungen die Problematik eines in parallelen Maßstab gestörten Verhältnisses zwischen Mensch und Natur analysieren. Dabei stehen regionale Aspekte, wie etwa die Konsequenzen veränderter Niederschlagsverhältnisse für die mitteleuropäische Landwirtschaft und die Bedeutung der deutschen Küsten durch Meeresspiegelanstieg und erhöhte Sturmstürke im Vordergrund.

Die intensiven langfristigen Wechselwirkungen zwischen Atmosphäre und anderen Naturphänomenen (Hydrosphäre, Biosphäre, Pedosphäre usw.) sowie die Rückkopplungseffekte zwischen Klimaveränderungen und anthropogenen (ökonomischen, sozialen und politischen) Reaktionen wie veränderte

Landnutzung oder Maßnahmen zur Reduktion von Treibhausgasemissionen werden mittelfristig jedoch eine "Gesamtbetrachtung" des Systems (Einkopplung der verschiedenen Ebenen) für die Realisierung von Modellen unumgänglich machen (siehe dazu obige Graphik).

Der Querschnittscharakter der dargestellten Forschungsgebiete erfordert insbesondere die Kopplung von Disziplinen (von der Meteorologie bis hin zur Umweltschädigung).

Die institutionellen Grundlagen der Kopplung von Disziplinen (von der Meteorologie bis hin zur Umweltschädigung) sind im PIK-Organigramm rechts oben dargestellt.

Der Institutsleiter und die Leiter der Abteilungen

- Globaler Wandel und Natürliche Systeme
- Klima
- Globaler Wandel und Soziale Systeme
- Data & Computation

arbeiten gemeinsam mit der Universität Potsdam und anderen Hochschulen im Berliner Raum als Professoren berufen

STRUKTUR UND ARBEITSWEISE DES INSTITUTS

Besondere Probleme erfordern besondere Lösungen. Zentrale Aufgaben des Instituts sind die

- Synthese von Daten
- Synthese von Resultaten
- Integration von Modellen bzw. Computersimulationen

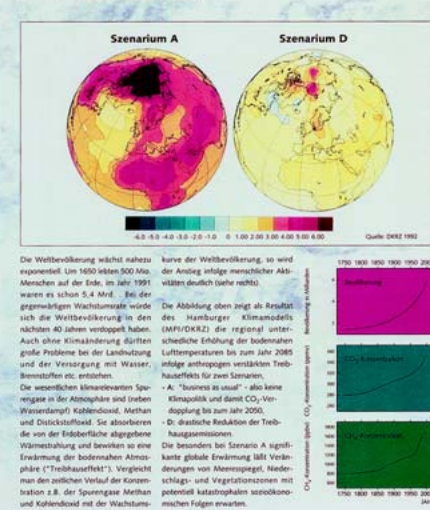
zum globalen Wandel. Dies setzt voraus, daß das PIK als ein "virtuelles Zentrum" innerhalb der nationalen und internationalen Forschung agiert. Nicht die Größe der Einrichtung ist ausschlaggebend, sondern die Qualität der Zusammenarbeit mit den führenden Institutionen der Meteorologie, Ozeanographen, Umwelttechnologie, Ressourcenökonomie, Umweltsoziologie etc., als den wissenschaftlichen "Partnern".

Die Empfehlung des Wissenschaftsrates von Februar 1992 für die Organstruktur des PIK trägt diesen Überlegungen Rechnung. Das Institut soll im Sinne einer funktionalen Kreuzung aus Max-Planck-Institut und Wissenschaftszentrum angelegt und mit möglichst flexiblen Berufsstrukturen ausgestattet sein. Die mittelfristige Gliederung in wissenschaftliche und administrative-technische Einheiten ist im PIK-Organigramm rechts oben dargestellt.

Als Standort des PIK wurde das wissenschaftshistorisch einzigartige Forschungsgelände am Potsdamer Telegrafenberg, das untenbar mit



BEVÖLKERUNGSWACHSTUM - VERÄNDERUNG DER ATMOSPHÄRE UND DES KLIMAS



Parts of PIK's first brochure.

Over the years, this basic mission of PIK was again and again transmitted to its own members and its outside collaborators. A resourceful Scientific Advisory Board (SAB) was established that took up intensive discussions with an ever growing number of researchers from various disciplines. PIK thus became deeply involved in thoroughly investigating the geophysical, ecological and socio-economic aspects of climate change, and climate-impact research became part of a more comprehensive Earth system analysis.

For various reasons and deliberately so, the concept and structure of the research work at PIK changed in the course of time. The work was first conducted in a matrix structure, and research management was based on departments, the Climate System, Natural Systems, Social Systems and Data & Computation Department, complemented by a Department for Integrated Systems Analysis dedicated to methodologies that cut across traditional scientific boundaries. Actual research work was carried out in projects (with often stimulating acronyms!) that tried to answer key questions, the so-called core projects. Nine such core projects were clustered under three research angles, namely global perspective, regional focus and sectoral view.

For years this structure proved quite successful and led to a first grade evaluation by the "Wissenschaftsrat", the German Science Council, who in 1999 defined PIK as "an outstanding research facility".

Mitigation of and adaptation to climate change were major themes of that first period of research work. Through data analyses, computer simulations and models, PIK provided sound information on and proposed appropriate goals, instruments and strategies for sustainable development, now and in the future. In addition to pro-active publishing in peer-reviewed journals and high-calibre books, scientific advice was given to national and regional authorities, to industry, non-governmental organisations and civil society at large.

Over the years, need was felt to revise the programme and to develop a new research profile – TOPIK^{2K}, an outcome of an elaborate internal contest and major efforts for increased excellence. In close collaboration with the Scientific Advisory Board seven major transdisciplinary research areas were prescribed, and the functions of the departments more clearly defined to support the resources for the research projects and to ensure the quality of the results. TOPIK^{2K} will thus contribute to integrated systems approaches to global change in general and Earth system analysis in particular.

Understanding the Earth system is a task that no institution can tackle alone. PIK therefore closely collaborates with many partners, plays an active role in activities such as the International Geosphere-Biosphere Programme (IGBP), the European Climate Forum (ECF), and the Intergovernmental Panel on Climate Change (IPCC), and coordinates a great number of multi-national research projects.

Excellent research depends, above all, on excellent people. And here PIK was extremely happy, particularly in engaging the Schellnhubers; both John and Petra, in their distinct functions, with their wide range of ideas and enduring creativity, made PIK the exceptional place it is, a well run, first-class institute, attractive to experienced senior and promising junior staff alike.

Petra Schellnhuber, who died so early (see the obituary on the next page), was a charming, but very outspoken woman, the "angel of the institute". The side-events of the annual meetings of the international Scientific Advisory Board,

which she took special care of, will be unforgettable. We had never had before and probably will never have again, a board meeting among the mummies in the Egyptian museum ...

All in all the number of staff now amounts to more than 150. They do cost a lot, but they also earn a lot, in research grants and in academic esteem, in better understanding of complex interactions and in suggesting relevant solutions – as is manifest from the other parts of this report.

Construction of PIK's provisional building on the Telegrafenberg in Potsdam.



PIK'S PALEOSITES

At the "Ex-Stasi Headquarters", PIK members from four of the future five departments began working together in a makeshift mode. In November 1992, Klaus Bellmann, Head of the Natural Systems Department, was joined there by his collaborator, and later successor, Wolfgang Cramer. These winter months were a peculiar and certainly memorable time for all those working in Berlin's Magdalenenstrasse. The group had found offices in the massive, deserted office complex formerly occupied by the "Ministry of State Security" (Stasi). Germans from both sides of the wall and some colleagues from other countries were working together, with Stasi furniture and phones, western UNIX workstations (but no internet access), and a steady stream of international visitors wanting to see the new institute. The director and the administration were, it seemed, on a different planet, accommodated temporarily in various buildings scattered all over the Telegrafenberg in Potsdam. Head-of-department meetings in Potsdam involved several hours of travel in the institute's grey Wartburg vehicle. These hours were of considerable value: both scientific issues and structural decisions for the institute were thoroughly discussed in Berlin traffic jams or along the bumpy streets crossing what used to be the Berlin wall. This "Berlin era" came to an end when the widely distributed parts of PIK were finally united on the Telegrafenberg in March 1993

M. Stock

Ten years of work - ten years PIK - this is a good occasion to look back. But there is equal reason to look forward, as neither the climate system nor the Earth system has yet reached a sustainable path, and the stability of the ecosphere is seriously threatened by human activities. I therefore would like to see PIK flourish for the next ten years and more, both in intellectual capacity and in excellent research work. Maybe my personal normative criteria for academic life could help to secure these wishes: Your work should be theoretically demanding, empirically relevant and done at the right time.

Congratulations to all PIK members for your work in the past; high expectations for your work in the future!

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