

Editorial

The Dutch National Research Programme on Global Air Pollution and Climate Change

The International Conference on Climate Change Research: Evaluation and Policy Implications, held from 6 through 9 December 1994 in Maastricht, The Netherlands, concluded the first phase of the Dutch National Research Programme on Global Air Pollution and Climate Change (NRP). The second phase of this programme started in 1995 and will last to 2001.

The conference covered a wide range of subjects, including the climate system, the causes of potential change in the system, the possible effects and consequences of climate change and possible alternative responses within the context of sustainable development. About 350 scientists, research managers and policymakers from in and outside the Netherlands participated in this successful conference.

These proceedings contain the texts of the opening statement made by the Dutch Minister of Housing, Spatial Planning and the Environment, invited papers of internationally recognised experts which give a state of the art assessment for several areas of climate change research (part one), assessment reports of the various parts of Dutch climate change research and short papers about Dutch and foreign ongoing research projects (part two).

History

Climate change is regarded as a serious global problem. Over the years the insight has grown that climate change may pose a serious threat to the world (and also to the Netherlands). To know more both about the nature and seriousness of the problem as well as about the possibilities for countering its effects an intensive international research effort is needed. The NRP was established in 1990 with the aim of providing a scientific basis for the development of climate change policies, and to increase the involvement of the Dutch research community both nationally and internationally in this field. The design of the programme around specific policy-relevant goals distinguishes it from many traditional approaches.

Central questions for climate change policy and research

The threat of climate change has posed governments a new problem and, in terms of its size and nature, one which is very difficult to manage. Central questions for policy making are: what is going on; what is at stake; what can be done about it, how and with what consequences; what should be the timeframe and what actions should be taken by whom? Such questions have to be translated into research terms in order to arrive at a research programme.

A first question with respect to the global climate problem is: How does the climate system work? What processes are going on? Which and what kind of climate

fluctuations can be expected? When are such deviations abnormal and do they have an anthropogenic origin? How predictable is all this?

A further question is how seriously the global carbon cycle is disturbed? What is the role of human activity in this? What is the influence on the global system of the greenhouse gases that are emitted?

Another question is related to the impacts and consequences of climate change on nature and society. Are the risks associated with climate change larger than those related to other changes in society, especially in the developing countries? How does all this fit in with the goal of a world-wide sustainable development?

And finally there is also the important question related to the way in which society deals with the climate change problem. Is it possible to mitigate emissions by the introduction of new technology? Or will it also demand the adaptation of societal structures and institutions, together with changes of lifestyle.

Organisation of the Dutch programme

The nature and scale of the climate problem demands a far broader approach than hitherto has been used. The programme comprised 150 research projects, the contents of which were distributed over five themes. The research effort represents approximately 700 man-years, of which 60% is contributed by the research institutions while 40% is funded through NRP. Over 30 research institutes and universities participated in the programme. The NRP is presenting itself in the international arena with "Change", a research and policy newsletter on global change.

Because of its policy-oriented mission, the NRP has a broad framework. The programme embodies fundamental scientific research to study the manner in which the climate system works and the physical and chemical processes that may produce climate change. Research on causes (emissions) contributes also to the knowledge of the climate system. The programme includes research towards the potential impacts of climate change and possible responses (technical, economic and behavioural/social options). The assessment component of the programme involves the synthesis, integration and communication of research results which provides the basis for decision making and policy actions.

In practice NRP is structured according to five themes, which also constitute the structure of these proceedings:

- the climate system: functioning, modelling and monitoring
- greenhouse gases: underlying causes of changes in the climate system
- impacts and consequences of climate change
- sustainable solutions
- integration of climate change research.

Besides these proceedings, final reports of all projects are available from the project leaders and the final report of the first phase as a whole will be published by the end of 1995. The report of the international review of the programme (S&PA, 1995) which was held during and just after the conference, is available from the Programme Office.

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