

past-climate record, projections of future climate and sea level, the timing of these changes, etc., and would identify the range of projections, anomalies, gaps, and uncertainties; it must include a peer-review process.

The second Working Group would review the environmental and socio-economic impacts of climate change in an integrated manner. It should emphasize evaluation of the impact on a regional scale as it affects agriculture, forestry, health, water resources and floods, sea level, desertification, energy, and other sectors. This Working Group should include consideration of the impact of continuously changing climate.

The third Working Group would consider, *inter alia*, forecasting and assessment of future emissions of greenhouse gases and assessment of changing technology, measures of adaptation, strategies to control or reduce emissions and other human activities that may have an impact on climate (e.g. deforestation, changing land-use), and their social and economic implications and relevant legal matters. Each Group should draw upon expertise and seek information wherever available.

It is planned to have the first report of the IPCC available about September 1990, for submission to the Second World Climate Conference and to the session of the UN General Assembly in late 1990.

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INTERNATIONAL CONFERENCE ON NATURE MANAGEMENT AND SUSTAINABLE DEVELOPMENT, HELD AT THE UNIVERSITY OF GRONINGEN, NETHERLANDS, DURING 6-9 DECEMBER 1988

As part of the 375th anniversary celebrations of the University of Groningen, an International Conference was held to explore the possibilities of new alliances towards converting the principles of sustainable development into real action on the part of international agencies, governments, and local communities.

The Report of the World Commission on Environment and Development (the 'Brundtland Report')—*Our Common Future*—was the basic document for the meeting, although it was not specifically discussed during the Conference, of which the major innovation was to address each topic from the perspective of science, government, law, and industry. The chairman of the organizing committee, Dr W. Verwey, professor of international law at the University of Groningen, selected a number of topics for the 9 working sessions, and succeeded in finding eminent speakers from very diverse fields of learning to introduce the different aspects of each of the topics. He was assisted in this by a number of national and international organizations and some private persons. Through his personal efforts he succeeded in finding a number of sponsors, so that many participants from developing countries could be invited to participate.

The subjects chosen were:

1. Management of the atmosphere: climatic change and rise in sea level;
2. Management of tropical forests;
3. Management of European forests;
4. Management of mountain forests in the Third World: The Himalaya;
5. Management of protected areas;
6. Management of grasslands and desertification control in Africa;

7. Management of wetlands;
8. Management of transboundary rivers: the Rhine; and
9. Management of the seas: the North Sea.

Because each subject needed to be treated from several quite distinct perspectives, the number of speakers was very large. In each session, one speaker was asked to provide an overview of the topic in 20 minutes while the others, 4 or 5 per session, each had only ten minutes available. In spite of the forebodings expressed before the Conference, the system worked. Nearly everybody was brief and precise. The chairmen did not have to employ draconian measures to keep to the time-schedule, so each session had about an hour for discussions. While the comments from the floor were often lively, most speakers joined in the spirit of the Conference by being concise and constructive. Of course not all who wanted to say something got a chance, but that is unavoidable in a well-attended conference. It is hoped that the printers of the Proceedings will do what they agreed to do, and that the report with all papers full-length, totalling some 600 pages of print, will appear during 1989.

The word 'sustainable' was not used by everybody in the same sense, as was to be expected. Fossil fuels (exhaustible) in most presentations were implicitly or explicitly the main source for energy production, with emphasis on economic use. The time-unit which people had in mind when saying something was 'sustainable' seems to have been around 40-50 years.

One of the ideas that came up many times was the necessity to involve local inhabitants in areas where conservation should be the leading principle of management, and some suggestions were made as to how best to use the local knowledge of the inhabitants. The principle was widely accepted that those who pay the costs of conservation (for example, by refraining from consuming wildlife living in forests adjacent to their lands) should receive proportionately more of the benefits of conservation. The legalistic problems were considered more profoundly than is usual in conservation gatherings, which shed some light on the many practical problems, particularly on the international scale. All agreed that education and precise information are required on a significantly larger scale than exist at present in many areas of the world.

A number of other conclusions were reached:

- No doubts were expressed about the warming up of the atmosphere due to human activities. Phasing out of CFCs should be much faster than is now planned. Long-term plans should be based on a legal instrument declaring the atmosphere as a common heritage of Mankind.
- While no clear consensus on the best techniques of using the tropical forests was reached, the idea that timber companies are the best agent to assure sustainability, as suggested by two speakers, was not accepted as valid by any of the participants in the general discussion.
- European forests are still deteriorating, though perhaps not at the increasing rate that was expected some years ago. Collaboration between East and West Europe, possibly within the ECE (UN), seems to be on the horizon.
- Areas such as the Himalaya are prone to heavy erosion if not carefully managed. This includes management of the lower slopes, where agriculture for the growing population is practised; major new international programmes will be required if the hundreds of millions of people affected by the Himalaya are to improve their standards of living.

- In protected areas new ideas are developing about their use, not only for tourism. Governments which are responsible for such areas should take a close look at the way in which the Annapurna conservation area is handled in Nepal, including the ways in which the indigenous people are involved.
- Overgrazing is a well-known problem, particularly in parts of Africa. The word often does not cover the complex process. The idea of reducing cattle numbers as a simple cure was heavily criticized, and alternatives were suggested. Family planning and education in matters of population problems and other ways of sustaining the productivity of the land should be encouraged. Legal protection of land tenure is an essential element in this complex matter.
- During the discussion of wetlands, the necessity to involve local inhabitants in their management was again stressed. The areas are still not valued by politicians and land-use planners at anything like their intrinsic worth.
- Both the problem of international rivers and the necessity of international cooperation in managing the coastal seas were subjects of useful exchange of information during the Conference.

A final paragraph in the conclusions stressed the necessity to strengthen the position of UNEP, so that sustainable development could be a prominent element in all attempts to improve the environmental situation, both in developing and developed countries.

The programme was very full, and no time off was taken for excursions or other forms of entertainment. The quality of the meeting was such that the Conference hall remained full up to the very end. Professor Verwey had clearly succeeded in his attempts to produce a programme that was worth while, and an exceptionally high number of speakers gave 'value for money'.

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INTERNATIONAL WORKSHOP ON CLIMATE-RELATED IMPACTS, HELD AT THE NATIONAL CENTER FOR ATMOSPHERIC RESEARCH, BOULDER, COLORADO, USA, DURING 14-17 MARCH 1989

This meeting was sponsored by the Climate Impacts Programme of the United Nations Environment Programme (UNEP) and the Environmental and Societal Impacts Group of the National Center for Atmospheric Research. The purposes of the meeting were to assess the value of, and constraints to, (1) establishing national networks of individuals, groups, and institutions, interested in climate-related impacts research, and (2) linking such networks within an international framework. Representatives from Australia, Brazil, Canada, Ethiopia, Hungary, Italy, Japan, Thailand, the UK, the USA, and Vietnam, attended.

The workshop included seven sessions. During the introduction, the purpose of the workshop and the evolution of the UNEP-WMO World Climate Programme and asso-

ciated activities were outlined. This was followed by presentations on recent climate-related research activities in Brazil, Ethiopia, Hungary, Japan, and the USA, as well as on developing global change research programmes. Climate impacts in each of the participants' countries were then described.

A discussion on the creation and activities of networks defined some important principles for success—particularly the identification of active participants from a variety of fields, and the need for awareness that considerable commitment is required to achieve desired goals. The international perspective was stressed—especially the fact that support from an international agency, such as UNEP, can be valuable in establishing national networks.

The meeting continued with presentations on the national climate programmes of Canada, Hungary, Italy, Japan, and the USA, followed by a panel discussion on the physical aspects and societal implications of global environmental change. The Networkshop concluded with a discussion on the problems and prospects of multidisciplinary research in the climate-related impacts and other fields. Particular emphasis was placed on the role of UNEP, which now recognizes climate and its impacts as a global issue that needs to be tackled holistically on both national and international scales. The discussion led to the drafting of recommendations on the establishment and maintenance of national and international networks and for national climate programmes.

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Important Prospect

INTERNATIONAL CONFERENCE ON HEADWATER CONTROL, TO BE HELD IN PRAGUE, CZECHOSLOVAKIA, DURING 20-23 NOVEMBER 1989

The Institute of Applied Ecology of the Agricultural University of Prague, in association with the World Association of Soil and Water Conservation in Europe, the Czechoslovak Scientific and Technical Society, and the International Union of Forest Research Organizations, is sponsoring the above major Conference with a water-resources focus.

The aim is to examine the practical aspects of land management in highland and headwater regions. These regions tend to be the least developed and least politically powerful parts of most nations, because they tend to be farthest from the centres of political power and influence. Their rugged natural terrain enhances their isolation and provides an environment of alarming vulnerability to ecological degradation.

The economic neglect of most highland and headwater areas by the peoples of neighbouring regions is matched only by those same peoples' high regard for those highlands as major resources of scenic beauty, wildscape, and both forest and water valuable resources. The central question is, how can these special steeplands be managed for the mutual benefit of both their local inhabitants and the nation at large. The problems of forest degradation by acidic precipitation and over-exploitation loom large alongside the hazards of landsliding*, erosion, and even more controversially, flooding.

* See pp. 169-72 of this issue for an Indian example duly illustrated.—Ed.