ECA Scientific Roundtable on the Climatic Situation and Drought in Africa, held by the Economic Commission for Africa (ECA) in Addis Ababa, Ethiopia, during 20–23 February 1984*; also the ECA Conference of Ministers, held in Addis Ababa in May 1984

This event was attended by representatives from 25 Member states of ECA, the Organization of African Unity, 10 other nations, 9 UN organizations, and 4 non-governmental organizations. The substantive sessions of the Roundtable dealt with three main topics as follows:

1) The review of the climatic situation and drought in the region (by WMO) and their impact on the socio-economic systems in Africa (a report by a representative of ECA on a UNEP meeting on this topic, supplemented by other material). The impacts of the drought range from complete crop-failures resulting in famine in many places, to increased human diseases and worsening economic conditions. The discussion by Members representing states led to agreement that useful information can be provided to farmers and planners using existing climate/weather information, despite the fact that the duration of the drought cannot be predicted accurately, nor can the drought be broken by artificial rain-making.

2) Review of country experiences. The representatives of each ECA Member state reviewed the drought experience in their countries, giving valuable information on specific drought situations, on the impacts, and in many cases on the actions that are being undertaken.

3) The draft Plan of Action to Combat the Impacts of Drought, which contains proposed actions at the national, regional, and international, levels in the short-term (1984–85), medium-term (1986–90), and long-term (beyond 1990). The actions were grouped under the major headings of climate, food and agriculture, renewable natural resources, water and energy, research and data, and manpower and training. The ECA requested, in the draft Plan of Action, that the UN and regional bodies form a Regional Interagency Working Group on Drought in Africa (RIWGDA), to monitor the progress made in implementing the Plan and to develop common strategies on how to deal with the drought problem.

Overall, the ECA Scientific Roundtable took a practical, no-nonsense approach to the problem of the drought in Africa and its terrible impacts on human life. The draft Plan of Action provides an outline of concrete actions which can be taken now and in the near future by African nations individually and regionally, and by the international and nongovernmental organizations involved.

When the ECA Conference of Ministers met in Addis Ababa, Ethiopia, in May 1984, one of their major topics was the drought in Africa and its impacts. The Secretary-General of WMO, Professor G.O.P. Obasi, addressed the Conference on the climatic aspects of the drought. He pointed out that the current drought is the worst in this century, but is not unprecedented in historical times. Statistical analysis shows that the climate has not changed to increase the frequency of droughts, nor is there a useful cyclical behaviour which can be used to predict droughts. Although we understand much about the general physical mechanisms which produce droughts, the quantitative explanation of droughts in Africa is not yet fully understood. Therefore meteorologists cannot yet accurately predict the onset or duration of a major drought. But it is clear that droughts are of common occurrence in arid and semi-arid regions, and hence governments must develop flexible, robust mechanisms, especially in agriculture, to be able to withstand prolonged drought. It is also clear that Mankind may aggravate the effects of drought through overgrazing and other mismanagement of land-usage.

The Secretary-General of the WMO also addressed the question of rain-making. He stated that the WMO position is that operational rain-making activities are not yet justified, especially in drought conditions, but that careful scientific experiments are of course welcome.

Professor Obasi proposed a series of short-term practical actions to improve the use of existing climatic data and information to help increase food production. He also made a proposal to adopt a resolution to develop an African Centre for advanced meteorological research, so as to understand better the drought, tropical cyclones, and other major atmospheric phenomena. The ECA Ministers adopted this proposal, and also adopted a resolution to strengthen the meteorological services in African nations, so that they can provide better service to their peoples than heretofore. Finally, the Ministers adopted the Plan of Action to Combat Drought in Africa which had been proposed by the Scientific Roundtable (*see* above). Now it remains to get the job done!

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Second International Wetlands Conference, held at the Hydrobotany Section of the Botanical Institute of the Czechoslovak Academy of Sciences, Trebon, Czechoslovakia, during 13–23 June 1984

The vast diversity of wetland biomes and their component ecosystems is reflected not only in their kinds and the biota which they support, but also in the terms used to designate them, and people's perception of their values. Until rather recently, most attention was devoted to the study of mires, which included areas known as bogs, fens, and carrs in English-language literature, and by a large number of other names in German, Russian, Swedish, Finnish, etc., which have enriched the science of these biomes and ecosystems. Other wetlands are marshes and swamps, often associated with lakes and rivers, and the floodplains themselves. Mangroves and coastal salt-marshes are also wetlands, distinguished from others by their saline nature. Numerous temporarily-flooded shallow water-bodies,

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* *See also* Dr Potter's account of the Expert Group meeting in preparation for the Roundtable, held by WMO at their headquarters in Geneva during 6–7 October 1983 under the Chairmanship of Professor F. Kenneth Hare, and published in our Spring issue this year (pp. 85–6).—Ed.

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mostly in the tropics and subtropics, are also wetland habitats, many of which have been treated by Man as undesirable waterlogged wastelands responsible for the spread of such dreaded diseases as malaria, filariasis, and schistosomiasis. Elsewhere, wetlands such as bogs have been a major source of peat for energy and use in horticulture. Even the biological resources of marshes and swamps (including mangroves) have been exploited for food, animal feed, and fibre, in very many parts of the world.

About fifteen years ago, wetlands were brought into focus by the International Union for Conservation of Nature and Natural Resources (IUCN) for their value as habitats particularly for waterfowl*. While the IUCN-sponsored Convention on Wetlands, adopted in 1971 and known as the Ramsar Convention, has made good progress in ensuring wetland conservation in different countries, several other international scientific organizations have endeavoured to increase our understanding of the structure and functioning of these biomes and their component ecosystems, to identify common concepts underlying their values, and to bring scientists involved in different kinds of wetlands together to a common forum. After the International Biological Programme (IBP) came to an end, the International Association for Ecology (INTECOL) took up activities related to wetlands. An *ad hoc* Working Group, formed under the chairmanship of late Professor V.J. Chapman, was responsible for organizing the First International Wetlands Conference, held in New Delhi (10–17 September 1980)† under the auspices of the National Institute of Ecology and Indian National Science Academy, with the support of UNESCO. How viable and active is the INTECOL Wetland Working Group, is amply demonstrated by the success of this well-attended Second International Wetlands Conference.

The Conference was co-sponsored by the Societas Internationalis Limnologiae (SIL), who had established a new Wetland Working Group at their latest Congress in August 1983, and were represented by the President of SIL, Professor H. Löffler, by the SCOPE (ICSU's Special Committee on Problems of the Environment) Working Group on Wetlands, and by the International Society for Ecological Modelling (ISEM). The Conference was supported through a small grant by UNESCO. More than 160 scientists, of whom 105 were from 24 countries outside the host country, participated.

The proceedings consisted of 65 oral presentations and about 80 posters. Four major themes were chosen for oral presentation. The first, Inventory of Wetlands, Human Impacts, and Management, covered a broad global survey of the kinds of wetlands, their classification and vegetation, uses, impacts, current management, and conservation status. The papers brought to attention once again the fact that, while enough is known about wetlands and their distribution in the USSR, Europe, and North America, very little is known from other regions. In fact, in many countries, there have been almost no efforts to inventorize different kinds of wetlands. The state of wetland research can only be appreciated from the non-existence of even basic data.

The second theme, Wetland Soils and Microbiology, showed that the physico-chemical changes in the soils under waterlogging are relatively well understood, but that the responses of biota to these changes have not been well investigated. Thus microbiology of wetland soils may be said to be as yet in its infancy; in fact, only one contribution made any direct reference to microbiological aspects.

The third theme, Wetland Plant Adaptations, covered a wide field of ecology and did not confine itself to plants, as several papers discussed the plant–animal interactions. The global role of wetlands in the functioning of The Biosphere, particularly in the carbon cycle and CO_2 balance, was also discussed. The wetlands may in fact be as important to the issue as are forests, because in most wetlands—particularly bogs—carbon accumulates as peat or detritus. The extraction and/or drainage of peat may contribute significantly to the global carbon dioxide levels. Some papers discussed the use of different wetlands for waste disposal or upgrading wastewaters. Wetlands do help to improve water quality for the first few years of addition of wastewaters, but their ability decreases sharply thereafter. We are not yet aware of the responses of the wetland biota to long-term nutrient and pollutant additions, and the use of wetlands for this purpose should be viewed with great caution. Again, the discussion of papers in this theme brought out the need for much more research on the responses of species and communities to the wetland environment and its modification by Man. More basic research on wetland biota should help us to understand their role, and factors governing diversity, for both conservation and management.

The fourth theme covered a session of papers devoted to mathematical modelling of wetland processes, and discussion of the SCOPE project on Freshwater Wetlands. SCOPE's Wetland Working Group has prepared a very comprehensive global state-of-the-art report, reviewing the world literature on characteristics, values, use, management, and modelling, besides providing several case-studies of different kinds of wetlands. The report is expected to be published sometime next year.

In addition there were 12 small-group Roundtable Discussions on different topics, while the poster papers also contributed a wealth of information on different aspects of wetlands, ranging from general ecology to specific management problems. Fortunately, enough time was available for discussion with the 'authors' of the posters. Excursions to wetland sites in the Trebon Biosphere Reserve (in which Trebon lies and the Conference was held) provided other valuable opportunities for on-site discussions and other mutual interactions.

A resolution was adopted by the Conference, calling for increased efforts towards conservation, based on improved understanding, of wetland ecosystems. If wetlands, or for that matter any other natural resources, are to be properly managed, and if the concern for the

(Concluded on page 252 with an 'Important Prospect')

*IUCN now have a Wetlands Officer, Dr Patrick Dugan, at their headquarters in the World Conservation Centre, Avenue du Mont-Blanc, 1196 Gland, Switzerland.—Ed.

†*See* the account by Dr N.V.C. Polunin in our following Spring issue (*Environmental Conservation*, **8**(1), p. 75, 1981), and already commenting that 'In some respects "wetlands" represent too broad a range of subjects to be adequately dealt with by a single coherent meeting and cohesive set of conclusions..'.—Ed.

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(*Continued from page 284*)

environment in the Third World is real, the avowed objectives can only be achieved by involving more and more of the people inhabiting those regions—towards sound learning and proper understanding. A distinct ray of hope is visible in the actions of such organizations as INTECOL, who decided to hold the first such Conference in India, and again the third in Brazil in 1988.

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Important Prospect:

CONFERENCE ON ACID RAIN: ECONOMIC ASSESSMENT, TO BE HELD FROM THE EVENING OF TUESDAY 4 DECEMBER THROUGH WEDNESDAY 6 DECEMBER 1984 AT THE LOEW'S L'ENFANT PLAZA, WASHINGTON, DC, USA

The Acid Rain Information Clearinghouse (ARIC) of the Center for Environmental Information (CEI), is sponsoring a two-days' conference to explore the contribution which the methods and tools of economics can make towards clarifying important questions and 'depolarizing' acid-rain issues. ARIC's goal is to set forth a state-of-the-art body of analytic economic information which will be useful in the decision-making process.

The Conference is intended to create a forum in which economists, scientists, public representatives, and decision-makers, can discuss their perspectives on the status of acid-rain research. Speakers at the Conference will not, however, debate the costs *versus* the benefits of acid-rain controls.

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