

UNEP
GC.14/3
ENG



United Nations Environment Programme

1986

**ANN
REP**

of the Executive Director

PART ONE

Nairobi, 1987



United Nations Environment Programme

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ANNUAL REPORT

PART ONE



(11)

UNEP/GC.14/3

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ABBREVIATIONS

ACC	Administrative Committee on Co-ordination
ADB	African Development Bank
AGFUND	Arab Gulf Programme for United Nations Development Organizations
ALECSO	Arab League Educational, Cultural and Scientific Organization
ASEAN	Association of South-East Asian Nations
BAPMoN	Background Air Pollution Monitoring Network, UNEP/WMO
BBC	British Broadcasting Corporation
CEFIGRE	International Training Centre for Water Resources Management
CFC	Chlorofluorocarbon
CIDA	Canadian International Development Agency
CIDIE	Committee of International Development Institutions on the Environment
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMEA	Council for Mutual Economic Assistance
CNES	Centre National d'Etudes Spatiales, France
DANIDA	Danish International Development Agency
DOEM	Designated Officials for Environmental Matters
ECA	Economic Commission for Africa
ECE	Economic Commission for Europe
ECLAC	Economic Commission for Latin America and the Caribbean
EEC	European Economic Community
ELC	Environment Liaison Centre
EMINWA	Environmentally Sound Management of Inland Waters
ERIM	Environmental Research Institute of Michigan, United States
ESCAP	Economic and Social Commission for Asia and the Pacific
ESCWA	Economic and Social Commission for Western Asia
FAO	Food and Agriculture Organization of the United Nations
FINNIDA	Finnish International Development Agency
GEMS	Global Environmental Monitoring System
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Pollution
GRID	Global Resource Information Data Base
IAEA	International Atomic Energy Agency
IAHS	International Association of Hydrological Sciences
IAWGD	Inter-Agency Working Group on Desertification
IBPGR	International Board for Plant Genetic Resources
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICIPE	International Centre of Insect Physiology and Ecology
ICRISAT	International Crop Research Institute for the Semi-arid Tropics
ICRO	International Cell Research Organization
ICSU	International Council of Scientific Unions
IDRC	International Development Research Centre, Canada
IEEP	International Environmental Education Programme
IFAD	International Fund for Agricultural Development
IGADD	Intergovernmental Authority on Drought and Development
IIASA	International Institute for Applied Systems Analysis
IIED	International Institute for Environment and Development
ILCA	International Livestock Centre for Africa

ILEC	International Lake Environment Committee
ILO	International Labour Organisation
IMO	International Maritime Organization
INFOTERRA	International Environmental Information System
IOC	Intergovernmental Oceanographic Commission, UNESCO
IPAI	International Primary Aluminium Institute
IPCS	International Programme on Chemical Safety
IPU	Inter-Parliamentary Union
IRPTC	International Register of Potentially Toxic Chemicals
IUBS	International Union of Biological Sciences, ICSU
IUCN	International Union for Conservation of Nature and Natural Resources
IUFRO	International Union of Forestry Research Organizations
MAB	Man and the Biosphere programme, UNESCO
MARC	Monitoring and Assessment Research Centre, University of London
MIRCEN	Microbiological Resources Centre
NASA	National Aeronautics and Space Administration, United States
NGO	Non-governmental organization
NOAA	National Oceanic and Atmospheric Administration, United States
NORAD	Norwegian Agency for International Development
OAS	Organization of American States
OAU	Organization of African Unity
OECD	Organisation for Economic Co-operation and Development
PPSC	Programme and programme support costs
RCSSMRS	Regional Centre for Services in Surveying, Mapping and Remote Sensing, Nairobi
ROPME	Regional Organization for the Protection of the Marine Environment
SADCC	Southern African Development Co-ordination Conference
SCOPE	Scientific Committee on Problems of the Environment, ICSU
SIDA	Swedish International Development Authority
SIPRI	Stockholm International Peace Research Institute
UNCHS	United Nations Centre for Human Settlements (Habitat)
UNCRD	United Nations Centre for Regional Development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Co-ordinator
UNEP/COM	USSR Commission for UNEP
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHHSF	United Nations Habitat and Human Settlements Foundation
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute for Training and Research
UNRISD	United Nations Research Institute for Social Development
UNSO	United Nations Sudano-Sahelian Office
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WFCC	World Federation of Culture Collections
WHO	World Health Organization
WMO	World Meteorological Organization
WRI	World Resources Institute
WTO	World Tourism Organization
WWF	World Wildlife Fund

PREFACE

1. The present report represents a milestone as it is the fifth report of its kind in a series initiated in 1982. Up to that time, it had been the practice to issue at each session of the Governing Council numerous documents reporting on various aspects of UNEP's activities—programme performance, implementation of the Fund programme, co-operation with non-governmental organizations, management of trust funds, administrative and budgetary matters, and so forth. But these documents, issued in response to requests from the Governing Council, the Economic and Social Council and the General Assembly itself, somehow failed to give a single and unified picture of what UNEP was, what it did, and how it worked. To rectify this failing, it was decided to amalgamate all the "reporting" documents, fit them into a coherent framework, and issue one single authoritative document, the Annual Report of the Executive Director.

2. The venture met with the approval of the Governing Council (decision 11/1, section I, paragraph 7) and has subsequently been continued on an annual basis. Increasingly, efforts are being made to incorporate all of the "reporting" elements into the Annual Report. Thus, the reader of a policy document containing proposals for policy guidance by the Council is referred (by cross-references) to a description in the Annual Report of past activities in the field in question. It is hoped that this system will not cause undue inconvenience to the reader. It has been adopted for a twofold purpose: first, to ensure that policy documents are brief and to the point; second, to reduce the volume of documentation by eliminating repetition in the documents submitted to the Council.

3. An innovation in the current Report is the omission of financial data. Owing to the need to get the Report to Governments as far in advance of the Council session as possible, and in view of the fact that the United Nations does not close its financial books until 31 March each year, it was decided to issue the 1986 Annual Report in two parts. The current document (Part One) contains the bulk of the descriptive material, but without financial data and the traditional report on the Environment Fund, which will be published at a later date in Part Two.

Chapter I

THE YEAR IN RETROSPECT

THE YEAR IN RETROSPECT

1. For all of us within the United Nations, the year 1986 will certainly be remembered as the year of crisis, a crisis that has repeatedly been referred to as a "financial crisis". For my part, however, I share the view of the Secretary-General who, in his report on the work of the Organization in 1986,¹ told the General Assembly that "the underlying causes of the budgetary problem of the United Nations are political". The financial aspect is not the cause of the crisis but is one of the manifestations of a far more threatening and deep-rooted problem, namely the serious political disagreement among States Members about the role and functions of the United Nations.

2. But 1986 was a year of crisis in other respects. For everyone within the ever-expanding circle of those concerned about our human environment, the year had its full share of crises. Events such as the nuclear explosion at Chernobyl and the chemical poisoning and pollution of the Rhine² brought home, as perhaps never before, the awareness of how vulnerable human health and life are to humanity's own inventions. It is ironical that the chemicals released by both the Sandoz accident at Basel and the explosion at Bhopal as well as the energy produced by the Chernobyl nuclear reactor were all intended for the benefit and well-being of humanity. Truly, man has within him the seeds of his own salvation—or destruction.

3. But the incidents of Bhopal, Mexico City, Chernobyl and Basel, tragic and horrifying as they were, are of but minor significance compared to the magnitude of crises we and our children will soon be facing if we do not work together now to find solutions. Aside from the ever present peril of nuclear war, the most serious threat to humanity is the devastating effect of over-exploitation and mismanagement of the planet's natural resources,³ and nowhere is this effect so evident as in the developing countries of the third world. The environmental degradation of these countries, manifested through deforestation, desertification, overpopulation, soil loss, mismanagement of fresh water resources, maltreatment of the marine environment, burgeoning urban populations and other environmental abuses, are already threatening the life support systems of those countries.

4. Africa, the continent of my birth, is a prime example of mounting environmental devastation. A continent rich in land, water, natural resources, and potential for development is being devastated by man himself. Two thousand years ago, North Africa was the bread-basket of the Roman Empire. Now, most of those hundreds of thousands of hectares of fertile land are barren wastes. Within our lifetime, semi-arid lands that supported numerous nomadic tribes have become sterile deserts, and once fertile farm lands are now savannah. As I told the participants in the first session of the African Ministerial Conference on the Environment, "we are witnessing a shift of ecological zones—desertification of the Sahel, sahelization of the savannah, savannization of the forests".⁴ In the last 100 years, a 150-kilometre-wide belt on the southern edge of the Sahara zone has deteriorated into non-productive desert and in the last decade alone 25 per cent of the 710 million hectares of African pasturelands have been lost.⁵ I could go on, citing other examples from Africa, Asia and Latin America, but these alarming figures and statistics are well documented and have been repeated time and again.

5. The immediate victims of the destruction of life-support systems are generally those least equipped to take effective measures against it. The vicious cycle of poverty leads families to destroy forests for food and fuel, over-cultivate marginal lands, over-graze and destroy the fragile savannah; the phrase "digging their own graves" has become grim reality. And to what effect are our posters, our media messages about the inherent dangers of deforestation, over-grazing, etc. to people that are starving? We are asking them to protect the environment for the next generation; their worry is how to get through today.

6. But it would be misleading to attribute the destruction of the planet's life-support systems solely to the poor and impoverished of the third world. As long as rich nations and richer sectors in developing countries continue to indulge in over-consumption and over-development, they are accelerating the depletion of non-renewable resources not only in their own countries, but the world over. Uncontrolled and untrammelled industrialization has led to a devastation of forests and damages to lakes and rivers in North America and Europe; acid precipitation in the North is certainly no less destructive than deforestation caused by land-hungry farmers in the South using primitive slash-and-burn methods to clear plots. Emissions of chlorofluorocarbons and other substances that have the potential to deplete the ozone layer, alter climate, and bring about other irreversible atmospheric changes are, too, the almost exclusive province of the developed world. Ultimately, if we, both rich and poor, North and South, do not change our course we will soon reach the outer limits of biospheric tolerance, threatening our own survival.

7. I repeat then, that 1986 was a year of crisis—crisis in the United Nations, crises caused by industrial accidents such as Chernobyl and Basel, and the looming crises threatening the life-support systems of our planet. But I would be loathe to characterize that year with the single word "crisis", for it presents only one side of the coin. Crises are also challenges. We dare not and indeed have not despaired simply because we are confronted by crises. It would, of course, have been better if preventive action had been taken before matters reached such a serious state of affairs. But nonetheless, when faced by crises, man often responds with energy and vision—and so it has been in the various crises in 1986 of which I have spoken.

8. First, the "financial" crisis of the United Nations. It is not for me here to describe the efforts that are being made by States Members and the United Nations organizations to resolve the current problems. I am convinced, however, that the United Nations will respond to the challenge and that a stronger, more efficient and effective United Nations will emerge from the current situation. I would like to say a few words, however, about what we at UNEP have done and are doing to meet the United Nations financial crisis in so far as it affects us.

9. One of the recommendations of the Group of 18⁶ concerns reduction of staff: "The overall number of regular budget posts should be reduced by 15 per cent within a period of three years."⁷ More than five years ago I told the Governing Council that, as a matter of policy, I would keep 20 per cent of the professional posts on the staffing table of this organization vacant, though it would mean "continuing to place a cruel burden on a staff already under severe stress".⁸ My concern was not to see the monies being contributed by Governments to the Environment Fund spent on salaries, office rentals and furnishings etc., but to ensure that those monies, to the maximum extent possible, were used to catalyse, co-ordinate and support environmental activities and projects. I have not changed that policy. During 1986, although I kept over 20 per cent of the professional posts on the authorized staffing table vacant, the programme of UNEP went ahead full speed. This meant that every professional officer was required to do not only his/her job, but to assume additional burdens and responsibilities to make up for the missing hands. Thus, when the Group of 18 calls for a reduction of posts by 15 per cent,⁹ we at UNEP can already point out

that we have continued to carry out our mandate with around 20 per cent less professional staff than the number of posts allocated to us. There are, however, limits to the demands that can be made upon an already overworked staff, and UNEP is very near those limits. The policy of saving at the cost of staff to implement the ambitious programme approved by the Governing Council cannot be pursued indefinitely without seriously impairing our capability to carry out UNEP's mandate.

10. In my 1985 Annual Report, I characterized 1985 as "a year of inventory and stock taking, with an eye to the future course of the Organization". I described how in early 1985, I convened a meeting of my senior staff, together with a number of distinguished consultants, under the motto "UNEP—1990", thereby laying the foundation for a thorough evaluation in 1986 of the effectiveness of this Organization. In the first quarter of 1986, a full internal evaluation was carried out of all UNEP's projects; we scrutinized and analyzed each sub-programme, project by project, of every one of the nearly 1,000 projects implemented by UNEP since its inception. I will not go into the details of that exercise here,¹⁰ but I can say that it prepared us to meet head-on the challenges to step up our efficiency; we have reported thoroughly on our mistakes as well as our successes, and I am laying before the Governing Council a series of proposals¹¹ that include very specific and measurable targets by which the Council and indeed the international community as a whole, can then measure whether or not this Organization has lived up to the expectations placed in it. We have not, and do not, claim to be perfect. We have made mistakes in the past, but hopefully, having identified and analysed these mistakes, we can reduce them to a minimum in the future. We have also had major successes and intend to capitalize on them by emulating their features in new projects. We have opened our books, laid the balance sheets bare and are now proposing courses of action to make us more efficient and more effective in the future.

11. I feel that UNEP has responded early and constructively to the "financial crisis" of the United Nations. An equal challenge has been passed to our member Governments. Is their interest in the environment sufficient to increase their support for our work? Having seen the targets we have set for ourselves, will they give us support to attain these targets? Will they provide the best of their talented and skilled citizens to work with us?

12. Second, I spoke of the "crises" of Chernobyl and Basel. But here, too, we are rising to the challenge. Shortly after the explosion at Chernobyl on 26 April 1986, I called on the Soviet authorities to provide the world community with all the necessary information about the accident in order to assess the impact. In our exchange of letters, General Secretary Gorbachev stressed the importance of international co-operation in the event of such accidents, particularly those that affected other States, and proposed the establishment of an international régime for the safe development of nuclear energy. Subsequently, IAEA convened a special session of its Board of Governors, followed by a session of the IAEA General Conference at Vienna. At the invitation of IAEA, UNEP participated in both meetings. The IAEA Conference adopted two conventions, one on the subject of early notification and the other on prompt emergency assistance in the event of nuclear accidents. UNEP vigorously supported these initiatives and called for additional steps to enhance safety within the entire nuclear fuel cycle. The Chernobyl crisis galvanized East and West, North and South into positive action; the challenge is being met.

13. For our part, we met with our colleagues in an inter-agency working group, including ECE, OECD, WHO, IAEA and UNEP, during the Conference at Vienna, and we formulated initial plans for the institution and implementation of measures within the United Nations system to protect human health and the environment and make nuclear energy safe.¹² This is a continuing effort in which UNEP will play an active, indeed, aggressive part.

14. After the chemical spill from the Sandoz plant near Basel on 1 November 1986 and the subsequent serious pollution of the Rhine River, representatives of countries bordering the Rhine met on 12 November and agreed on additional proposals for action by the International Commission for the Protection of the Rhine against Pollution and its member States. On 24 November, ministers responsible for the environment in the EEC countries met and agreed on a resolution designed to strengthen and improve existing rules and regulations pertaining to chemical handling, storage and transport. On 19 December, the Seventh Conference of Ministers on the Pollution of the Rhine was held, with the participation of the ministers responsible for the protection of the Rhine of the Rhinarian States and the competent member of the Commission of the European Communities. At the Conference, agreement was reached on a long-term ecological goal, namely to restore the health of the Rhine by the year 2000 and, to this end, an action plan is being prepared.

15. The United Nations system also reacted: I requested and received information on the accident from the Swiss authorities. On 4 December, I submitted a set of proposals to the sixth meeting of the Committee of Permanent Representatives to UNEP, proposals designed to assist Governments to prevent and minimize the occurrences and harmful effects of chemical accidents and emergencies. Subsequently, I sent these proposals under covering letter to all Governments, requesting their comments and suggestions and I also moved to obtain the views of industry on measures to deal with such problems. At the same time, I initiated contacts with ILO, WHO and UNIDO with a view to formulating a programme within the United Nations system to help us to respond better to such incidents. Once again, we have acted to meet the challenge. When our consultations are completed, I shall submit proposals for action to the Governing Council.

16. It is unfortunate that it takes accidents of the magnitude of Chernobyl or Basel to drive home the fact UNEP has been preaching for years, namely that environmental degradation and pollution do not respect national or political boundaries and that international co-operative measures can correct them. Phenomenon such as acid rain, the warming of the atmosphere due to the effects of greenhouse gases, the destruction of the planet's tropical forests, the alarming rate at which the ozone layer is being depleted, the fast and steady advance of desertification, the destruction of the marine environment—all these affect millions of people, many of whom live far removed from the causes of such phenomenon.

17. Events such as these should make us all more conscious than ever before of the telling words of Barbara Ward that we are living on "only one earth". What we do as individuals, groups, nations and regions has a direct impact on the other inhabitants of this common home. More important, perhaps, is the fact that what we now do, or fail to do, will affect the life and health of our children and our children's children.

18. But what are we doing about the major crises, in general, as the international community and as UNEP? I referred earlier to my own continent, Africa, as an example of environmental devastation. But Africa is as well an example of how we are responding to the challenge. At the end of 1985, UNEP, in co-operation with OAU and ECA, convened the first African Ministerial Conference on the Environment, which adopted the Cairo Programme for African Co-operation.¹³ Since the Conference, I have followed with keen interest the work and dedication of ministers and senior government officials in the African countries as they strive to establish the machinery that will transform the Programme for African Co-operation from words to deeds. The most heartening aspect of this work is that the Governments and peoples of Africa are themselves getting together and working to tackle their own problems.¹⁴

19. Elsewhere in this report (chapter III, para. 45), I mention the Green Belt Movement, a non-governmental organization that originated in UNEP's host country, Kenya. To date,

this movement has been responsible for planting over 2 million trees in Kenya and it is now sharing its success and experiences with the peoples of neighbouring countries. This is a prime example of people at the grass-roots level concerned enough about their own environment to do something about it. And the movement is growing, as witnessed by the rapidly increasing number of environmentally minded NGOs throughout the third world.

20. In 1986, the first Arab Ministerial Conference on Environmental Considerations in Development was convened, with UNEP's assistance, in Tunis, with the participation of 20 Arab countries. Their delegations included 12 ministers responsible for the environment in their respective countries. The Conference adopted a five-point Arab Declaration on the Environment. It also established an Arab Ministerial Council on the Environment to ensure that the lofty ideals of the Declaration would be translated into fruitful action.¹⁵ This is another example of Governments and peoples taking a real and deep interest in the protection and enhancement of their own environment.

21. UNEP is proud to have contributed to the support and organization of these activities and has pledged its support to follow-up actions.

22. The marine environment, the womb of life on earth itself, is another life-support system that is being subjected to ever increasing and more threatening pressures. For that reason we were especially gratified that, on 25 November 1986, 16 States adopted the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region. Additionally, two protocols to the Convention were also adopted: one on the prevention of pollution by dumping and the other on co-operation in combating pollution emergencies.¹⁶ This latest Convention brings to nine the number of action plans adopted within the framework of UNEP's regional seas programme, eight of which have related protocols. Negotiation on a tenth action plan is under way. Thus, the UNEP regional seas programme now encompasses nearly 130 countries around the globe who are partners in a common effort to protect and enhance our marine environment.¹⁷

23. The life-supporting atmosphere of the earth is also being threatened by human action. Recently, the media have begun to highlight the potential danger of the depletion of the ozone layer. Here, too, UNEP and the international community are responding to the challenge. As reported in the 1985 Annual Report (chapter IV, paras. 44 and 134), the Vienna Convention for the Protection of the Ozone Layer was adopted in March 1985 and to date, more than 20 countries have signed and eight have ratified the convention. Throughout 1986, the UNEP Co-ordinating Committee on the Ozone Layer (CCOL) and other scientific bodies continued with diligence their intense efforts to improve the scientific understanding of the processes which control atmospheric ozone. UNEP organized technical workshops to examine the production, emission, use, trade and possible control of suspected ozone-damaging substances. These meetings have been followed up by new negotiations to develop a protocol to the Convention on the control of chlorofluorocarbons, the chemicals most strongly implicated as the depleters of ozone layer. I am hopeful that the coming year will witness the adoption of a protocol to the Vienna Convention, a protocol designed to give content and meaning to statements of concern and intent.

24. Another pressing and related atmospheric issue is that of climate change induced by greenhouse gases. National bodies co-operating in the WMO/UNEP/ICSU World Climate Programme are addressing this issue. UNEP is supporting and encouraging regional analyses of the social, economic and political implications of the future climate, the likes of which have never before been experienced by the human race. The world scientific community is carefully considering the various options to prevent, delay or adapt to climate change, and UNEP has targeted the development of a legal instrument for an organized global response to this threatening issue by 1992.

25. The UNEP Global Resource Information Data Base (GRID) is another means through which we are attempting to introduce proper management of our planet's life-support systems. By utilizing the computer-based technology of its geographic information system, GRID is striving to convert environmental data into useful information by integrating resource data in a relevant way to address specific problems in specific locations. In a co-operative effort involving the United Nations system as well as Governments, the available data are being analyzed and categorized. Only by bringing all the facts into focus on a specific issue or on the problems of a specific geographical area can we hope to find real solutions. Through GRID, we hope to combine relevant environmental data sets with a view to understanding, then forecasting and eventually managing properly our natural resources.

26. It is evident that the world community is responding through specific actions to the daunting challenge of protecting and preserving our planet's life-support systems. But—and here I must add a note of caution—much remains to be done. And it must be done immediately; we cannot procrastinate. We are currently going through a cycle of economic conservatism. Unemployment and deficit budgets characterize many of the industrialized countries; poverty and a crushing burden of debt plague the developing world. In such a climate it is understandable that third world countries do not assign high priority to environmental problems. For their part, developed countries are not showing the readiness to lend the massive support necessary to deal with the environmental problems of the third world. What is especially disheartening is that while both North and South are pointing to fiscal constraints as the main reason for their inability to devote greater resources for environmental concerns, the arms race continues unabated. If we, collectively, would devote a fraction of the energy, resources and resolve we are currently spending on means of our own destruction to saving our own future, we could make immediate and impressive headway in our fight to preserve our life-support systems.

27. As environmentalists, as concerned citizens of our planet earth, we must work to change the public's attitude towards environmental problems. The peoples and Governments of the South must be made to see that environmental issues demand their priority attention and support; it is not a matter that can be allowed to slide, for every day, every week that passes, the productive resource base, so critical to the economic stability and development of those countries, is being eroded. The peoples and Governments of the North must be made to see that they have a direct interest in helping the South to deal with its environmental problems. The destruction of the life support systems in countries of the South lead to economic and political instability, destroy the very foundations of sustainable development and ultimately threaten the peace and stability of the entire world.

28. The message is taking hold. Multinational and national aid agencies and institutions are beginning to take the environment seriously in their projects and activities. The African and Arab environmental conferences, of which I spoke earlier, together with a growing grass-roots environmental movement in the developing world, are encouraging signs.

29. The crises and their challenges are on our doorstep. If we set reasonable goals and targets and work together, we can prevail. Let us hope that 1986, a year of crisis, will mark a turning point, when crises are seen as challenges and challenges lead us to constructive action.

Notes

- 1 *Official Records of the General Assembly, Forty-first Session, Supplement No. 1 (A/41/1).*
- 2 A report on the accidents at Chernobyl and Basel is being submitted to the Council at its fourteenth session in document UNEP/GC.14/10.
- 3 The threat was spelled out in 1980, in the World Conservation Strategy, issued by IUCN in co-operation with UNEP and the WWF: "Human activities are progressively reducing the planet's life-supporting capacity at a time when rising human numbers and consumption are making increasingly heavy demands on it".
- 4 *Report of the Executive Director of the United Nations Environment Programme to the African Environmental Conference*, (Nairobi, UNEP, 1985), Chap. I, para. 17.
- 5 *Ibid*, para. 19.
- 6 Although it has become common to refer to the Group as "The Group of 18", the official title is "Group of High-level Intergovernmental Experts to Review the Efficiency of the Administrative and Financial Functioning of the United Nations".
- 7 *Official Records of the General Assembly, Forty-first Session, Supplement No. 49 (A/41/49)* recommendation 15 (2)(a).
- 8 UNEP/GC.10/2/Add.7.
- 9 Although the Group of 18 refers only to regular budget posts, the reference here is to the totality of UNEP professional posts.
- 10 See *Evaluation Report 1986*.
- 11 See "Future orientation of the work of UNEP" (UNEP/GC.14/4/Add.4).
- 12 Specific recommendations in this regard are being proposed to the Governing Council in document UNEP/GC.14/10.
- 13 See *Annual Report 1985*, chap. II, paras. 65-74.
- 14 See chap. III, para. 27, below.
- 15 For further information on the Conference, see chapter III, paras. 28-30, below.
- 16 See chap. IV, paras. 154-159, below.
- 17 See chap. IV, paras. 147-163, below.

Chapter II

INTERGOVERNMENTAL LEGISLATION OF RELEVANCE TO UNEP

UNEP Governing Council

Economic and Social Council

General Assembly

International Conferences

INTERGOVERNMENTAL LEGISLATION OF RELEVANCE TO UNEP

1. The following paragraphs contain a brief description of legislative measures of relevance to the work of UNEP adopted by intergovernmental and other bodies during 1986.

UNEP GOVERNING COUNCIL

2. The year 1986 was unique for UNEP in that, for the first time in the organization's history, its main intergovernmental legislative body, the Governing Council, did not hold a session. Thus, there were no developments with regard to intergovernmental legislation emanating from the Governing Council during the year under review.

ECONOMIC AND SOCIAL COUNCIL

3. As there was no session of the Governing Council in 1986, the Economic and Social Council had no item on the agenda of its second regular session in 1986 addressing the specific subject of international co-operation on the environment. It did, however, adopt three resolutions of relevance to UNEP. In resolution 1986/44 of 21 July 1986 on countries stricken by desertification and drought in Africa, the Economic and Social Council expressed its appreciation for the role of the United Nations Sudano-Sahelian Office (UNSO) in helping, and in co-ordinating United Nations efforts to help, the States members of the Permanent Inter-State Committee on Drought Control in the Sahel and the Intergovernmental Authority on Drought and Development (IGADD), and urged UNSO to increase its assistance to the Sudano-Sahelian and adjacent regions in combating desertification and drought, paying attention to the most severely affected countries. In a related resolution, 1986/45 of 22 July 1986 on assistance to the drought-stricken areas of Djibouti, Ethiopia, Kenya, Somalia, the Sudan and Uganda, the Council noted with appreciation the assistance provided by UNDP and UNSO in the effort to establish IGADD, and appealed to all Governments, organizations of the UN system and intergovernmental and non-governmental organizations to contribute generously so as to provide the resources necessary for funding the operational costs of the unit within UNSO responsible for assisting the countries members of the Authority. The relevance of these resolutions to UNEP is that UNSO's desertification mandate is a joint venture of UNDP and UNEP, working on behalf of UNEP in the Sudano-Sahelian region to implement the Plan of Action to Combat Desertification.

4. In its resolution 1986/72 of 23 July 1986 on protection against products harmful to health and the environment, the Economic and Social Council urged Governments to continue to co-operate with the UNEP International Register of Potentially Toxic Chemicals (IRPTC) and WHO in providing current, corrected and updated information on national regulatory actions. IRPTC provided inputs for a report prepared by the Secretary-General on products harmful to health and the environment, and is updating a list of banned and restricted products.¹

GENERAL ASSEMBLY

5. During 1986, the UN General Assembly held a special session on the critical economic situation in Africa, in addition to its regular autumn session.

Special session on the critical economic situation in africa

6. The General Assembly's thirteenth special session, on the African economic crisis, was held from 27 May to 1 June 1986. At the conclusion of the session, the Assembly adopted a resolution (S-13/2) entitled "United Nations Programme of Action for African Economic Recovery and Development 1986-1990". Space does not permit comprehensive treatment of the Programme of Action here, but it is of interest to note that many of the points it contains coincide with those of the Cairo Programme for African Co-operation adopted by the First African Ministerial Conference on the Environment, which was convened by UNEP, in co-operation with ECA and OAU, in Cairo in December 1985 (*1985 Annual Report*, chap. II, paras. 65-74). African Governments' commitment to policies designed to ensure environmentally sound development was also apparent in "Africa's Priority Programme for Economic Recovery 1986-1990", which was adopted by the OAU Assembly of Heads of State and Government at its twenty-first ordinary session, held in Addis Ababa in July 1985. This OAU Programme, which served as a major input for the preparation of the UN Programme, stipulates that the first priority at the national level is agricultural development, followed by drought and desertification, human resources development, planning and utilization, and policy reform. Priorities at the regional level include strengthening the institutional framework and consolidating African co-operation—the very essence of the Cairo Programme.

7. The Cairo Programme for African Co-operation set out as its general objective the strengthening of co-operation between African Governments in economic, technical and scientific activities, with the prime objective of halting and reversing the degradation of the African environment in order to satisfy the food and energy needs of the peoples of the continent.²

Forty-first regular session

8. At its forty-first session, in the autumn of 1986, the General Assembly focussed its attention on the financial crisis of the United Nations. Like the Economic and Social Council, the Assembly had no specific item on its agenda relating to environment, and only two resolutions concerning UNEP or the environment directly were adopted. Both of those resolutions (41/62 A and 41/62 B) refer to the United Nations Scientific Committee on the Effects of Atomic Radiation. In resolution 41/62 A, the Assembly commended the Committee for the valuable contribution it has been making since its inception 31 years ago, and noted with satisfaction the continued and growing scientific co-operation between it and UNEP. The Committee was requested to continue its work to increase knowledge of the levels, effects and risks of ionizing radiation from all sources, while UNEP was requested to continue providing support for the effective conduct of the Committee's work and for the dissemination of its findings to the Assembly, the scientific community and the public. In resolution 41/62 B, the Assembly decided to increase the Committee's membership to a maximum of 21 and invited China to become a member.

9. Several of the Assembly's resolutions and decisions are of indirect relevance to UNEP. By decision 41/454, it decided to defer consideration of a draft resolution entitled

“Countries stricken by desertification and drought in Africa” until its forty-second session. This was a procedural decision, as the Assembly is scheduled to take up the subject of desertification and drought together with international co-operation on the environment at its forty-second session. The draft resolution in question is very similar to Economic and Social Council resolution 1986/44 (see para. 3 above).

10. In its decision 41/455, the General Assembly endorsed Economic and Social Council resolution 1986/45 on “Assistance to the drought-stricken areas of Djibouti, Ethiopia, Kenya, Somalia, Sudan and Uganda” (see para. 3 above).

11. In its decision 41/456 on drought and desertification in Mauritania, the Assembly took note of a proposal made by an inter-agency mission to Mauritania that the relevant organs and organizations of the United Nations system, including UNEP, should be invited to consider assisting the Government of Mauritania in the preparation of a multisectoral action plan to combat desertification and drought that might be considered by the international donor community.

12. By its decision 41/450, the Assembly endorsed Economic and Social Council resolution 1986/72 on protection against products harmful to health and the environment (see para. 4 above).

13. In decision 41/310, the Assembly, elected 19 members of the Governing Council of UNEP for a three-year term commencing on 1 January 1987. The composition of the Governing Council in 1986 and 1987 is indicated in annex I to the present report.

14. The Assembly adopted three resolutions on the question of Antarctica which, though they do not concern UNEP directly, are of interest owing to the environmental implications involved. The first resolution (41/88 A) deals with the subject of non-availability of information on certain issues affecting the question of Antarctica. The Assembly requested the Antarctic Treaty Consultative Parties to keep the Secretary-General fully informed on all aspects on the question of Antarctica so that the UN can function as the central repository of all such information. In resolution 41/88 B, the Assembly called upon the Antarctic Treaty Consultative Parties to impose moratorium on the negotiations to establish a minerals régime until such time as all members of the international community can participate fully in such negotiations. In resolution 41/88 C, the Assembly appealed to the Antarctic Treaty Consultative Parties to take urgent measures to exclude the racist *apartheid* régime of South Africa from participation in the meetings of the Consultative Parties at the earliest possible date. All three resolutions were adopted by a roll-call vote in which the Consultative Parties themselves did not participate.

INTERNATIONAL CONFERENCES

Eighth Conference of Heads of State or Government of Non-Aligned Countries

15. The Eighth Conference of Heads of State or Government of Non-Aligned Countries, held in Harare from 1 to 6 September 1986, adopted, inter alia, an Economic Declaration that contained a special section on “Environment and other qualitative aspects of development”.³ In that section the heads of State or Government expressed concern over the continued deterioration in the quality of the world’s environment. They noted that, in the absence of timely measures, there was a distinct possibility of exponential worsening and irreversible destruction of the global environment. In this context, they stressed the need for ecologically balanced and rational development planning, the pooling of information on resource-conserving technologies, and conservation and assessment of the ecological resources of the environment.

16. They further stressed that “the protection of the marine environment is a common responsibility of all States, and called on all States strictly to refrain from any actions and activities that endanger the quality of the marine environment and ecological conditions and jeopardize marine life”.

17. The heads of State or Government noted with satisfaction the measures taken by UNEP to prepare the Environmental Perspective to the Year 2000 and Beyond, and urged the non-aligned and other developing countries to co-ordinate their contribution to the preparation of the Perspective. They also welcomed the establishment of the Special Commission on the Environment (the World Commission on Environment and Development), and expressed the hope that the Commission’s report and the Environmental Perspective itself “would focus global attention on the interrelated issues of environment and development, and that it would assist in the mobilization of large resources to enable developing countries to pursue long-term policies which harmonized environment and development objectives.”⁴

18. The heads of State or Government expressed their full support for General Assembly resolutions 37/215, 38/163, 39/167 and 40/197 regarding problems related to remnants of war in the territories of the developing countries. They appealed to all countries responsible for such remnants to co-operate with the UN Secretary-General, organizations and specialized agencies in supporting the legitimate demands of the countries affected by the existence of war remnants, particularly mines, as the continued presence of these in their territories seriously jeopardized their development efforts.

19. The heads of State or Government noted with appreciation the resolutions adopted by the African Ministerial Conference on the Environment, held in Cairo in December 1985, and urged UNEP and the specialized agencies to increase their assistance to the African countries in order to alleviate the effects of drought and desertification. They expressed their support for the resolutions adopted by the UN to protect the environment, and urged all States to adhere to the appropriate international legal instruments related to environmental protection so as to ensure their comprehensive application.

First Arab Ministerial Conference on Environmental Considerations in Development

20. The First Arab Ministerial Conference on Environmental Considerations in Development, organized by the League of Arab States, the Arab League Educational, Cultural and Scientific Organization (ALECSO) and UNEP, took place in Tunis in October 1986. The Conference adopted a five-point Arab Declaration on the Environment and set up an Arab Ministerial Council on the Environment and an interim executive bureau to implement the decisions taken, including those leading to the institutionalization of the Conference.⁵

Interaction Council

21. The Interaction Council of former heads of Government, constituted in 1983 to mobilize the experience, energy and international contacts of a group of statesmen in order to stimulate action on fundamental issues vital to the future of humanity, links together high-level personalities from over 50 countries.

22. At its fourth session, held from 7 to 10 April 1986 in Tokyo and Hakone, Japan, the Council adopted a Final Statement, the first part of which refers to population, environment and development. Pointing to the fact that the balance between population, environment

and development has been lost, the Council stated that “the twenty-first century may not arrive if the problems of population, environment and development are not solved”. It emphasized the problems of the world population (4.9 billion at present) and continuing environmental deterioration. The Council called on Governments to reduce military and other non-productive spending and place top priority on the interrelated issues of population, environment and development, urging the Governments of industrialized countries in particular to increase their financial assistance to developing countries rapidly and dramatically.

23. The Council also noted that global destruction of the environment was looming, and that vigorous action was immediately required. It urged specific national environmental protection programmes, international co-operation in educating people, a free transfer of ecological know-how, and the strengthening of international institutions. New technologies already available to reduce urban air pollution should be urgently introduced, alternative sources of energy which limit the amount of hydrocarbons expelled into the atmosphere should be emphasized, and trade in hazardous wastes and dangerous chemicals should be checked. Chemical manufacturers should not sell in developing countries chemicals which are prohibited in the producing countries. In all technological undertakings and planning, Governments should include provisions to safeguard the environment. They should assess present and future resources in such a way as to lead to population policies through which all human beings may be reasonably assured of the satisfaction of their basic needs. Growth was no longer an abstract target—it had to be closely related to social justice and ecology.

Notes

- 1 UNEP's activities in this area are described in chapter IV under budget subline 7102.
- 2 “Report of the First African Ministerial Conference on the Environment” (UNEP/AEC.1/2), annex I, resolution 1/1, section I, subsection A.
- 3 The final documents of the Conference were presented to the General Assembly at its forty-first session in document A/41/697 S/18392, annex.
- 4 A/41/697 S/18392, annex, sect. II, subsect. XVIII.
- 5 The Conference is described in greater detail in chapter III below, paragraphs 28-29

Chapter III

THE CO-ORDINATING, CATALYTIC AND STIMULATING ROLE OF UNEP

Co-ordination within the UN system

Co-ordination with supporting organizations

Environmental outreach

The Clearing-house

THE CO-ORDINATING, CATALYTIC AND STIMULATING ROLE OF UNEP

1. As explained in some detail in the *1985 Annual Report* (chap. III, para. 1), the role of UNEP within the UN system is unique. It is neither an executing agency nor a financial institution, though at times it acts in one or the other of these capacities. But the basic task of UNEP has remained constant since its inception nearly 15 years ago, namely to catalyse, co-ordinate and stimulate environmental action within the UN system. Additionally, UNEP, though itself a part of the United Nations, has a mandate to reach outside the system, for one of the specific responsibilities entrusted to the Executive Director by the UN General Assembly is "to secure the effective co-operation of, and contribution from, the relevant scientific and other professional communities in all parts of the world."¹ Thus the partners of UNEP in its endeavours to protect and enhance the human environment range from the family of UN bodies and agencies to large intergovernmental organizations such as ASEAN, CMEA, the EEC, the League of Arab States, OAS, OAU, OECD, etc., the more established and larger international non-governmental organizations such as IIED, IUCN, SCOPE, WWF, and, of course, the Environment Liaison Centre (ELC) in Nairobi, and national groups or institutions. In the past years, UNEP has been making a special effort, through its "outreach programme" to reach other groups such as industry, women, young people, parliamentarians and religious communities.

2. Given the extremely wide range of UNEP's partners and of its co-ordinating and catalytic activities, no attempt is made in the following paragraphs to provide comprehensive coverage of such activities. Rather, the reader is provided with a cross-section, illustrative of the various co-ordinating and catalytic activities of the organization.

CO-ORDINATION WITHIN THE UN SYSTEM

3. Each year, the Administrative Committee on Co-ordination (ACC), the highest co-ordination forum within the UN system, has on its agenda the subject of co-ordination of activities in the field of the environment. ACC, chaired by the Secretary-General of the UN, with the participation of the executive heads of the specialized agencies and a number of senior officials of the UN Secretariat, submits an annual report to the UNEP Governing Council on UN system-wide co-ordination in the field of the environment. As no session of the Council was held in 1986, the Governing Council at its fourteenth session in 1987 will have before it two reports from ACC, the first adopted on 28 October 1985 (UNEP/GC.14/8), and the second on 23 October 1986 (UNEP/GC.14/12).

4. ACC deals with the co-ordination of UN environmental activities at the highest level (i.e. at the level of the executive heads), but the mechanism for co-ordinating such activities in the UN system at the working level takes the form of the meetings of the Designated Officials for Environmental Matters (DOEM). Each specialized agency and relevant UN body has designated an official to represent it at these meetings.

5. As mentioned in the *1985 Annual Report* (chap. III, para.9), the question arose during 1985 of how to improve the functioning and effectiveness of the DOEM mechanism. Early in

1986, a small informal “think-tank” meeting was held in Marsascala, Malta, to consider how, in the light of past experience, the role and functioning of the DOEM mechanism could be improved and made more effective. Its conclusions were then taken up by the DOEM themselves at their March 1986 meeting. The DOEM generally agreed with the recommendations of the Marsascala meeting that there was no call to redefine the functions of the DOEM as such, but that what was needed was to strengthen the role of the DOEM through the provision of adequate support to enable them to carry out their tasks.

6. The Marsascala recommendations were further endorsed by ACC at its October 1986 session which welcomed UNEP's stated intention of taking the outcome of the Marsascala meeting fully into account in its co-operation with its partners in the UN system. Recognizing the essential role of the DOEM in providing an effective co-ordination mechanism in environmental matters for the entire UN system, ACC agreed that the DOEM should be given the appropriate status, continuity and broad technical expertise to carry out its mandate. ACC also endorsed the view of the DOEM that the co-ordination process should include bilateral discussions between UNEP and agencies with a view to agreeing on the joint efforts required, in each case, over a given period of time. Consequently, several such inter-agency consultations were initiated in 1986 with some of UNEP's major partners including FAO, IAEA, ILO, UNCHS (Habitat), UNDRO, UNESCO, UNIDO, and WHO, as a preliminary to more detailed discussions in 1987.

7. The DOEM also discussed a number of other important issues, at its March 1986 meeting, including the preparation of the second system-wide medium-term environment programme (1990-1995) and the draft UNEP programme budget for 1988-1989,² the cross-organizational programme analysis on the environment, which will be prepared for the Economic and Social Council's Committee for Programme and Co-ordination in 1988, and the internal evaluation carried out by UNEP (see chap. IV below, paras. 2-6). The DOEM were also informed of the outcome of the First African Ministerial Conference on the Environment, held in Cairo in December 1985, and progress in the preparation of the Governing Council's Environmental Perspective to the Year 2000 and Beyond.³ The DOEM further endorsed a suggestion made at Marsascala that ACC's annual report to the Governing Council should in future include a short, substantive, thought-provoking technical section on a topic that cuts across the programmes of the various DOEM member agencies, and a similar section on issues of co-ordination policy on environmental matters.

8. At their September 1986 meeting, part of which was chaired by the Executive Director, the DOEM had an exchange of views with the Secretary-General of the World Commission on Environment and Development, during which they pointed out the essential role played by UNEP and the Environment Fund, as well as the various agencies of the UN system, in co-operating with Governments on matters of environment and development, and suggested that this point be emphasized to the World Commission.

9. During the year, the Executive Director held discussions with the Administrator of UNDP with a view to fostering closer relations between UNEP and UNDP.⁴ In 1986 UNEP co-operated with UNDP in developing a methodology, compatible with existing UNDP procedures, for including environmental aspects and concerns in UNDP's project formulation, monitoring and evaluation, and a set of standard operating procedures for UNDP project preparation and implementation with respect to environmental matters.

10. UNEP also worked closely with UNDP throughout the year to introduce environmental considerations into UNDP's Fourth Programming Cycle (1987-1991). At the Inter-governmental Consultations on the UNDP Regional Programme for Europe, held in Geneva in April, UNEP emphasized the need to avoid overlapping in environmental projects proposed by UN agencies. At the May 1986 meeting of the UNDP Task Force on

Environment, held in Nicosia, which had the task of agreeing on projects to be included in the UNDP Regional Programme for Europe in the field of the environment, UNEP again underlined the need to avoid duplication of activities, to give special attention to problems that concerned more than two European countries, and to select projects that would offer opportunities for outreach to other regions, especially North African and other Mediterranean countries. UNEP representatives played an active part in the thirty-third session of the UNDP Governing Council, held in Geneva in June 1986, at which a number of country programmes for the Fourth Programming Cycle were adopted.

11. During 1986 a number of UNDP resident representatives from Africa and Western Asia made official visits to UNEP headquarters to discuss joint development objectives at the field level and pool information. They were briefed by UNEP staff working in areas particularly relevant to the countries in question. One of the positive results of these meetings has been the tentative agreement of UNDP Somalia to provide support under the country programme for a Somali Wildlife Review which encompasses land-use planning and environmental management, as well as a proposed seminar on environmental management.

12. One of the issues that attracted major concern in UNEP in 1986 was the Chernobyl nuclear accident. In the aftermath, UNEP played an active part in discussing measures to enhance nuclear safety. Immediately after the Chernobyl accident, the Executive Director called on the Soviet authorities to provide the world community with information concerning the accident so that an assessment of the impact could be made. The General Secretary of the Soviet Communist Party, Mr. M. Gorbachov, exchanged letters with the Executive Director emphasizing the importance of international co-operation in such incidents where other States are affected and proposing the institution of an international régime for the safe development of nuclear energy.

13. At the invitation of IAEA, UNEP participated in a special session of the Board of Governors as well as the IAEA General Conference held in Vienna in September 1986. UNEP emphasized the need to look at the environmental aspects of the nuclear cycle as a whole, encompassing the mining of uranium; power plant design and siting; training of operating staff; checking and inspection of nuclear plants; waste disposal; monitoring of radiation and assessment of its impact on ecosystems, in particular agricultural and pastoral land; and liability and compensation for environmental damage in cases of nuclear accidents. The Conference adopted two conventions, one dealing with early notification and the other with assistance in case of nuclear accidents. UNEP expressed strong support for these measures. On the occasion of the Conference, a number of organizations and agencies got together in an Inter-Agency Working Group (ECE, OECD, WHO, IAEA and UNEP) to discuss following-up actions to Chernobyl and similar events.

14. Another major UNEP activity in 1986 was triggered by the accident at the Sandoz chemical depot near Basel, Switzerland, in November that severely polluted the River Rhine. The Executive Director proposed that UNEP should lead the international community in formulating concrete measures to deal with such problems. Appropriate steps would be to develop conventions under which Governments would notify one another of industrial accidents having potential transboundary effects and assist one another in case of such an accident. Additionally, UNEP could initiate an effort to develop international guidelines to be used by Governments, industry and local communities in shaping programmes to identify, take precautions against or deal with industrial chemical accidents at the local level. The proposal met with a favourable reception, and UNEP is currently consulting Governments, international organizations—specifically ILO, UNIDO and WHO,—and industry to decide how to proceed.

15. The reflection of system-wide co-ordination in the field of the environment is not to be found in meetings alone, however, but more so in actual projects and activities. During 1986, UNEP had 88 projects that were being implemented in co-ordination with other UN agencies and organizations, including UNESCO (22), FAO (18), WHO (12), WMO (7), UNCHS (3), ECA, ECE, ESCWA, ESCAP, IAEA, ILO, IMO, UNHHSF, UNRISD, and others.⁵

16. In 1986, out of total commitments of about \$21 million for the implementation of Fund programme activities, some \$5 million (close to 24 per cent) was accounted for by activities implemented by co-operating agencies (i.e. agencies and bodies within the UN system). Details of a number of these joint projects are to be found in chapter IV ("The environment programme"). Additionally a glance at annexes III (Publications and papers issued in 1986) and IV (Meetings held in 1986) will reveal the great number of activities in which UNEP co-operated with other members of the UN family during the year under review.

17. A word of caution—the UN system is often criticized for redundancy and duplication of effort. Although such criticism is undoubtedly warranted in a number of instances, at times it arises out of a misunderstanding. For administrative reasons, each organization must report to its governing body on the activities it has carried out each year. Thus, for example, when UNEP is co-operating with ILO and WHO on a joint project, the governing bodies of ILO, UNEP, and WHO will all receive a report on one and the same project—but this is evidence of co-operation, not of duplication of effort. Since in 1986 UNEP alone, which is by definition a "small secretariat", had nearly 90 joint projects with co-operating agencies within the UN system, it should be abundantly evident that what at first glance may seem to be duplication is actually the result of co-ordination and co-operation.

CO-ORDINATION WITH SUPPORTING ORGANIZATIONS

18. Supporting organizations, in the terminology employed by UNEP, refers to non-profit-making institutions such as intergovernmental organizations outside the UN system, non-governmental organizations (NGOs), research and scientific institutions, etc. During 1986, a total of \$5.8 million, representing 27.6 per cent of the total commitments of \$21 million in 1986, went towards the implementation of Fund programme activities by supporting organizations.

Intergovernmental organizations

19. Currently, 40 intergovernmental organizations enjoy observer status with the Governing Council. Most of these organizations deal with a specific field, and co-operation and co-ordination between them and UNEP generally take place at the working level, i.e. in specific projects and activities. A number of these activities and projects are described in chapter IV ("The environment programme"), under the appropriate budget lines and sublines.

20. In Europe, UNEP continued to follow closely the activities of the Organisation for Economic Co-operation and Development (OECD). UNEP participated in the two meetings of OECD's Environment Committee, in April and December, and emphasized the global dimensions of the environmental issues on the agenda of those meetings. Of particular interest to UNEP was the Committee's approval of a subproject on "Improving environmental management and monitoring capabilities in developing countries"; the project sheet explicitly took into account UNEP's ongoing programme to review case-studies of simplified and cost-effective procedures for assessing the environmental impacts

of development projects. Throughout the year, UNEP also assisted in the preparations for the OECD Seminar on Environmental Assessment and Development Assistance, which is scheduled for 1987. In this exercise, UNEP's experience in promoting environmental impact assessment in developing countries proved invaluable, and specific mention was made of Cyprus as an example where UNEP's input had already led to institutional changes in support of more effective action in this field.

21. Throughout the year, UNEP maintained its co-operation with the Council for Mutual Economic Assistance (CMEA). At the twenty-third session of the CMEA Board for Environmental Protection, held with UNEP participation in Tallinn, USSR, in June 1986, the Board approved targets up to the year 1990, covering co-operation in aspects of environmental protection; environmental impact assessment of major development programmes; the rational use of natural resources; the introduction of low-waste and non-waste technologies; and the treatment and utilization of municipal, industrial, agricultural and other wastes. UNEP also participated in a CMEA conference on low-waste and non-waste technology held in Budapest in September, where it shared its experience in that field with CMEA member States.

22. UNEP was represented at the Nordic Council's International Conference on Air Pollution, held in September 1986 in Stockholm. The participants—parliamentarians from all the Baltic and North Sea States as well as from Austria and Switzerland—adopted by consensus a communiqué calling for intensified efforts to reduce emissions of nitrogen oxides and hydrocarbons, including work on binding protocols to bring about reductions within an agreed period. UNEP welcomed this important step in support of the work being pursued on such a protocol in the ECE Working Group on NO_x emissions.

23. Throughout the year under review, UNEP continued to maintain close contacts with the Baltic Marine Environment Protection Commission (the Helsinki Commission). UNEP took part in the seventh annual meeting of the Commission, which was held in February in Helsinki, sharing the experience it has gained in the field of marine protection through the regional seas programmes, and especially the Mediterranean Action Plan.

24. UNEP's work with the EEC during 1986 consisted primarily of discussions relating to the preparations for the European Year of Environment in 1987, involving various UNEP units such as IRPTC, the Oceans and Coastal Areas Programme Activity Centre, the Mediterranean Unit in Athens, etc.

25. In Africa, UNEP continued throughout 1986 to work closely with the continent's main intergovernmental organization, the Organization of African Unity (OAU). UNEP participated in the OAU Council of Ministers session and the Assembly of Heads of State and Government, held in July in Addis Ababa. UNEP worked to ensure that the recommendations of the First African Ministerial Conference on the Environment (Cairo, 1985), and particularly the Cairo Programme for African Co-operation, were incorporated into the United Nations Programme of Action for African Economic Recovery and Development 1986-1990 which was adopted by the General Assembly at its special session in May 1986.⁶

26. UNEP also strengthened its ties with the Southern African Development Co-ordination Conference (SADCC), and was represented at the inaugural meeting of the Intergovernmental Authority on Drought and Development (IGADD) which was held in Djibouti in January. At the meeting, attended by the Heads of State and Government of the six member States, a programme of action was adopted on combating drought and desertification.

27. Through its Regional Office for Africa, which provides secretariat services for the African Ministerial Conference on the Environment, UNEP closely co-ordinated follow-up action for the implementation of the Cairo Programme for African Co-operation with the countries of the region. In July UNEP organized in Geneva a meeting of all appropriate UN agencies and bodies in an Inter-agency Working Group to carry out the tasks assigned to it by the Conference, namely, "to seek to co-ordinate the activities of international agencies among themselves, in relation to the implementation of the Cairo Programme for African Co-operation, to assist in relating the individual programmes of international agencies to the African programme, and to serve as a scientific and technical advisory body to the Bureau of the Conference through the permanent secretariat". At a special meeting convened by the Executive Director in Geneva in September with 16 donor Governments and 2 international organizations, one of the subjects discussed was that of possible financial and technical support from the major donor countries and institutions for the implementation of the Cairo Programme. Of special interest to the participants was the recommendation that 150 African villages (3 per country) and 30 semi-arid stock-raising zones should be assisted to become self-sufficient in food and energy. Working with the Bureau of the Conference, UNEP was also active in preparing for the second session, scheduled to be held in Nairobi in June 1987.

28. Throughout the year, UNEP, through its Regional Office for Western Asia in Bahrain and its office in Tunis for liaison with the League of Arab States and ALECSO, developed a closer working relationship with a number of intergovernmental bodies in the Arab world. One of UNEP's most significant achievements during the year was the convening, as a result of a UNEP initiative (1985 Annual Report, chap. III, para. 19), of the First Arab Ministerial Conference on Environmental Considerations in Development, organized jointly by UNEP, the League of Arab States and ALECSO. The Conference, which took place in Tunis in October, was attended by delegations from 20 Arab Governments including 12 ministers responsible for environmental issues, 3 deputy ministers and representatives of a number of regional and international organizations. The Conference adopted a five-point Arab Declaration on the Environment to provide a framework for national action, and for regional Arab and international co-operation, to protect the environment.

29. The Declaration states that, while socio-economic development is an essential and vital factor in improving the quality of life, no sustained development is possible unless environmental considerations are taken fully into account. The Conference also set up an Arab Ministerial Council on the Environment, as well as a temporary executive bureau composed of environment ministers from Iraq, Kuwait, Morocco, Saudi Arabia, the Syrian Arab Republic and Yemen. The Council is to draw up an Arab strategy for the management and protection of the environment, which will serve as a framework for national strategies and a basis for international co-operation. The last day of the Conference, 14 October, was designated Arab Regional Environment Day. In November the Executive Director had a meeting with the President of the Executive Council in Riyadh to discuss UNEP support for Conference follow-up.

30. On the occasion of the Conference, a memorandum of understanding between UNEP and the League of Arab States was signed by the heads of the two organizations. The memorandum stipulates that the two organizations will co-operate to ensure the complementarity of development objectives and environmental protection, with special emphasis on environmental considerations in economic and social development planning.

31. In the course of 1986, UNEP assisted the administration of the Bahrain-based Arabian Gulf University in establishing a graduate programme for desert and arid zone sciences. Connected to this graduate programme is the establishment of a network of external contacts for the development of the curriculum. The Executive Director of UNEP delivered the inaugural lecture when the programme was initiated in November.

32. Another significant achievement during the year was the development of concrete co-operative activities between the UNEP Regional Office for West Asia and the secretariat of the Gulf Co-operation Council. An agreement was signed with respect to the surveying and strengthening of institutional and management capabilities in Council member countries, the identification and assessment of environmental problems, and the surveying and assessment of environmental legislation and standards. A draft memorandum of understanding between the two secretariats is expected to be signed early in 1987.

33. After the Arab Ministerial Conference, UNEP conducted extensive consultations in Kuwait with the Pan-Arab Planning Institute (a regional institution for economic and social planning) with a view to organizing a training programme for senior planners to promote the full consideration of environmental factors in development planning in national and regional programmes. Agreement has been reached in principle to launch this programme in the second half of 1987. Similar consultations were carried out with the Arab Fund for Economic and Social Development, a regional institution, with all Arab States as members, for financing development within its member States. A programme for training senior officials in operational departments of regional and national Arab financial institutions was discussed.

34. Throughout the year under review, UNEP maintained its close relationship with ALECSO, and discussions were held with its Director-General with a view to activating the programme for environmental protection of the Red Sea and the Gulf of Aden. Co-operation with the Regional Organization for the Protection of the Marine Environment (ROPME) was sustained in 1986, and the Executive Director addressed the ROPME Ministerial Council in October.

35. UNEP concluded arrangements in 1986 with the Arab Centre for Studies of Arid Zones and Drylands to assist in the preparation of national plans for combating desertification in a number of countries of the region; an agreement to this effect was concluded with the Syrian Arab Republic in 1986, and similar joint activities are planned in 1987.

36. In Asia and the Pacific, UNEP continued its co-operation with ASEAN throughout 1986. ASEAN and UNEP catalysed and co-ordinated the organization in 1986 of a workshop on policies and strategies for managing hazardous wastes, which produced a set of guidelines. UNEP also assisted in the formulation of basic management policies for ASEAN heritage parks and reserves, and catalysed and co-ordinated technical assistance which was provided by the United States National Park Service.

37. Throughout the year, UNEP continued its assistance to the South Pacific Regional Environmental Programme. UNEP participated actively in a regional conference held in Nouméa, New Caledonia in September to consider and review the work programme for 1987 and 1988. UNEP provided support for several expert preparatory meetings that culminated on 25 November in the signing of a Convention for the Protection of the Natural Resources and Environment of the South Pacific.⁷

38. UNEP's Regional Office for Latin America and the Caribbean continued to serve as the technical secretariat for the Intergovernmental Regional Forum for the Environment in Latin America and the Caribbean and, in this capacity, helped to support the implementation of both large "umbrella" projects and related national subprojects. UNEP assisted the Federación Latinoamericana de Jóvenes Ambientalistas to organize a meeting on participation by young people in an environmental education campaign, and helped to organize the Second Conference of the Federation, held in November in Maracay, Venezuela.

Non-governmental organizations (NGOs)

39. Even before the establishment of UNEP, NGOs played a leading role in stimulating public interest in and concern for the environment in developed and developing countries alike and their numbers are continuously increasing. UNEP attaches great importance to co-operation with these NGOs, as it is through them that environmental concerns and activities reach down to the grass-roots level.

40. The importance the Governing Council attaches to co-operation with NGOs was reflected in its decision 13/13, in which it urged the Executive Director "to improve and make better use of the mechanisms by means of which the Environment Programme in consultation with Governments, utilizes the capacities of non-governmental organizations".

41. UNEP has made special efforts to work more closely with NGOs in the implementation of the environment programme. In the field of desertification, for example, UNEP supported preparatory work in 1986 aimed at the establishment of an NGO network for desertification control in Argentina, Chile, Colombia, Peru and Uruguay. NGOs in Latin America and the Caribbean have been involved in the establishment of a regional network to reinforce regional information activities. Through UNEP's Regional Office for Asia and the Pacific, three NGOs of that region have co-operated with UNEP in projects using traditional media in environmental communication.

42. Working through the African NGOs' Environmental Network, the main focal point of co-ordination with over 280 African NGOs in 29 countries, UNEP provided support for a project to reinforce co-ordination among African NGOs at the national and regional levels. It is hoped that strengthened co-ordination will permit better exchange and dissemination of information and experience in combating desertification in Africa. UNEP and the Network are also planning training programmes aimed at strengthening the capacity of NGOs to carry out anti-desertification activities and projects. Discussions were held throughout 1986 with NGOs in Asia and the Pacific with a view to forming a network of the numerous NGOs engaged in anti-desertification activities in the region.

43. In February 1986, UNEP participated in an African NGOs' seminar held in Nairobi in preparation for the UN General Assembly's special session on Africa. UNEP's contribution to this Seminar led to the inclusion of environmental aspects in the NGOs' report to the Assembly. UNEP also collaborated with the Arab Office for Youth and the Environment, supporting an information awareness project involving the publication of an Arabic newsletter and pamphlets and training for Arab journalists. Preparatory work on the establishment of an NGO network covering five Latin American countries has already been described. UNEP's Regional Office for Latin America and the Caribbean also printed a directory of regional NGOs and distributed it widely. The Regional Office for Asia and the Pacific maintained and continuously updates a mailing list of 300 NGOs in the region which are regularly supplied with information and media materials by UNEP.

44. One of the prime channels through which UNEP works with international, regional and national NGO networks is the Nairobi-based Environment Liaison Centre (ELC), which co-ordinates a network of over 6,000 NGOs dedicated to the protection and enhancement of the environment and keeps the NGO community informed about UNEP. ELC's bimonthly Ecoforum and its quarterly News Alert regularly respond to NGO inquiries about UNEP activities, particularly those related to genetic resources, pesticides and forestry. ELC has been receiving support from UNEP since its inception.

45. Many other examples may be given of UNEP's efforts to assign a greater role to NGOs in developing countries in environmental information activities and in the environmental

activities of community self-help institutions. As a result of close co-operation with the National Council of Women of Kenya and the associated Green Belt Movement, over 60 tree nurseries have been established and some 2 million trees planted in Kenya. Training is carried out on a continuous basis and the trainees are sent back to their own areas to initiate Green Belt Movement activities. The Movement is now beginning to share its experience with other countries in the region.

ENVIRONMENTAL OUTREACH⁸

46. In pursuance of its mandate "to engender a better understanding of the central role of global environmental issues in the broader economic and social context", UNEP began, in 1984, to implement a strategy of "environmental outreach". This programme was designed to develop new constituencies and strengthen existing ones in order to create greater awareness about environmental issues represented by UNEP, its global concerns and activities, and its mandate to deal with environmental issues. The following outreach activities were carried out during 1986.

Follow-up to the World Industry Conference on Environmental Management

47. UNEP continued to work in 1986 to follow up the decisions of the World Industry Conference on Environmental Management, held in Paris in November 1984 (*1984 Annual Report*, chap. II, paras. 34-36). In January the Executive Director convened a follow-up meeting of senior government officials and chief executive officers from industry. Subsequently, the International Environmental Bureau was established in Geneva by industry and government on environmental issues. It operates in association with the International Chamber of Commerce, but functions independently and is funded and staffed by industry. It serves as a reference centre for environmental information on the control and abatement of pollution from industrial and commercial activity. It assists in developing data bases on environmental issues, and provides information on the availability of industrial experts qualified to counsel developing countries. It does not undertake original research, but refers inquiries to existing sources and, as appropriate, helps disseminate information that may not be readily obtainable through existing channels. Thus the Bureau seeks to enhance, not duplicate, the work of existing information sources such as those maintained by UNEP and various NGOs, including industry and trade associations.

48. As a follow-up to a Conference decision to foster a substantive dialogue at geographical levels more conducive to practical action than the global framework, a regional workshop on the roles of government and business in environmental and resource management in Asia and the Pacific was held in Bangkok in January. The workshop was co-sponsored by the World Resources Institute (WRI), the Environment and Policy Institute of the East-West Center in Hawaii and UNEP, with participants from industry, NGOs, Governments of the region and decision-makers from industry.

49. In pursuance of the recommendation for action in the fields of information, training and technical assistance, the UNEP Industry and Environment Office organized, in June 1986, a meeting of representatives of a number of industry associations. The meeting focused on the priority areas of training of nationals, provision by industry of expertise to solve specific industrial environmental problems in developing countries, and the provision of information and preparation and dissemination of case-studies, guidelines and technical manuals. The associations agreed to continue co-operating with the Industry and Environment Office in preparing new technical publications, reviewing existing publications

to determine whether they should be updated, providing information to the Office's Query-response Service, and including in their training courses participants from developing countries identified by UNEP.

50. Further to a recommendation that industry should provide expertise to solve specific industrial environmental problems in developing countries, the Industry and Environment Office arranged for two Japanese iron and steel industry experts and one municipal authority expert to visit iron and steel plants in China to undertake environmental diagnoses of the plants, recommend corrective measures and design training programmes for subsequent training of Chinese technicians in Japanese iron and steel plants. A similar Japanese mission is to be undertaken in Indonesia. French industry also provided expert services to China and Venezuela to advise the Governments on the environmental problems associated with the iron and steel and aluminium industries and hazardous waste management.

National committees

51. Consultations initiated in 1985 were continued in 1986 between UNEP and top-level public and private sector officials in the Federal Republic of Germany, France, Italy, Japan and the United Kingdom, and also in a few countries in the other regions, in order to locate suitable organizations and persons willing to take on the task of organizing a national committee for UNEP. Such national committees are intended to help to broaden awareness of, and support for, UNEP in individual countries and possibly help in fund-raising efforts. An agreement has already been concluded for the establishment of a national committee for UNEP in the Federal Republic of Germany. Discussions are at an advanced stage for the establishment of similar committees in Mexico, the Syrian Arab Republic and Thailand.

Follow-up to the Inter-Parliamentary Conference on Environment

52. Following the UNEP/IPU Conference which took place in 1984 (*1984 Annual Report*, chap. II, paras. 37-38), UNEP, in co-operation with IPU, developed in early 1986 a questionnaire designed to identify progress in the implementation of the recommendations and conclusions adopted by the Conference. The replies to the questionnaire were analysed and a report issued. A meeting in February 1987 will discuss the report and suggest further action to be taken.

Religious groups

53. In 1986, contacts were made with representatives of several prominent world religions, and many of them accepted UNEP's invitation to participate in the 1986 World Environment Day celebrations by spreading the environmental message through sermons, newsletters and meetings. In October, an informal meeting with representatives of religious groups based in East Africa gathered at UNEP headquarters to discuss possible ways of co-operating with UNEP in order to further its environmental objectives, for example through dissemination of information through their existing networks.

Women's groups

54. The Standing Committee of Senior Women Advisers on Sustainable Development, which was established by UNEP following the 1985 World Conference to Review and Appraise the Achievements of the UN Decade for Women, met in 1986 and agreed on global and regional targets aimed at promoting awareness about UNEP and the mobilization of

women in environmental activities. Several activities were initiated at the national level with UNEP support, such as training workshops for women in Bangkok. Support was also provided to grass-roots initiatives such as the Kenya Green Belt Movement, and to information and media campaigns in North America. Within UNEP, a small task force was set up to support the Committee members' efforts and further develop the outreach strategy by pursuing proposals to reach out to women and creating a global network of women to support those efforts.

Young people

55. The responses received from young people to the challenge of the Executive Director in his World Environment Day message of 1985 (*1985 Annual Report*, chap. II, para. 35) were analysed in 1986 and formed the basis for a three-part Environmental Youth Agenda which lists positive environmental activities undertaken by young people world-wide and makes suggestions for further action. The Agenda was launched by the Executive Director at the 1986 World Environment Day celebrations and distributed to the world press in special kits prepared to highlight the theme of "Environment and peace".

56. Since then, the Agenda has also been sent to 110 International Youth Year National Co-ordinating Committees as well as some 300 major youth organizations and networks throughout the world, African youth leaders who participated in a UNEP workshop in November 1985, and African environment ministers and ministers holding the youth portfolio in Africa. Copies were also sent to UNEP permanent representatives and UNEP regional offices.

57. The Agenda is not the end of the experience, but rather the beginning of a long process in which young people will hopefully become UNEP's partners in its efforts to protect and enhance the environment. The global number of young people is expected to pass the 1 billion mark by 1990. Increasing their involvement in environmental protection will serve to give them a significant role in building, planning and conserving the environment. The Agenda will be revised and expanded as young people everywhere embark on more varied and ambitious environmental activities. A questionnaire will be sent to recipients of the Agenda soliciting feedback as to which of the 50 or so suggested activities they found most relevant, what projects they have embarked upon and what additional help UNEP—in its catalytic rather than its funding role—could provide.

THE CLEARING-HOUSE

58. UNEP's Clearing-house, established by the Governing Council as an experiment in 1982, has as its central function the mobilization of resources, additional to those of the Environment Fund, from governmental and international development co-operation institutions, non-governmental organizations and the private sector, to support specific, well-formulated activities designed to meet the serious environmental problems of developing countries.

59. By 1986, approximately \$15 million had been raised through the Clearing-house for environmental projects and short-term technical co-operation activities in developing countries. The major contributors to Clearing-house projects in 1986 were the Federal Republic of Germany, the Netherlands, Norway, Sweden, the United States, AGFUND and the EEC. Finland joined the group in May 1986 by signing an agreement with UNEP and committing \$100,000 for programme and project preparation.

60. At the end of 1986, some 82 projects that would require approximately \$80 million for full implementation were still awaiting in need of finance. These figures indicate the growing concern of developing countries for environmentally sound development, a concern that is not being matched by the decisions of many development co-operation institutions.

61. In view of this large gap, the Executive Director convened in September 1986, in Geneva, a meeting on the financing of environmental programmes of developing countries, in which 16 Governments and 2 international organizations participated. The conclusions of the meeting are reflected in some detail in the Executive Director's report to the Governing Council on the Clearing-house.⁹

62. To illustrate the approach followed by the Clearing-house in the formulation of long-term programmes to meet serious environmental problems of developing countries, it may be useful to review, in some detail, the programme developed with Botswana. A long-term programme for the environmentally sound management of land and water resources in Botswana was formulated through the efforts of the Clearing-house in 1983, and approved by the Government of Botswana in 1984. In 1986, the programme was in full swing. A key component of the programme, the preparation of a national conservation strategy, was far advanced and its adoption is planned for 1987. This project, financed by Norway, Sweden and the EEC, is being implemented with technical support from IUCN. Under a related project, financed by the Netherlands, a thorough analysis of environment-development linkages and a data base of environment-related projects were prepared and submitted to the Government.¹⁰ Information compiled through this project is providing the data and analytical base for the national conservation strategy and other projects. Specific investigations were carried out on those areas in which Botswana's natural resources are particularly threatened, and it is hoped that the investigations will lead to environmentally sound management of the resources concerned. The United Kingdom financed and executed a project in one of these areas, namely forests in eastern Botswana, a country where the bulk of the population is concentrated along the eastern border and relies on wood to meet needs. Sweden is supporting projects in two other areas: the Okavango delta, a unique wetland ecosystem and Botswana's major perennial source of water; and the Greater Gaborone area, where urban expansion calls for specific protective measures. Consultants were sent to advise the Government on the reorganization of water administration and on wildlife legislation. Monitoring of wildlife stocks, threatened by the expansion of the cattle industry and depleted by several years of drought, was resumed under fresh financing from the EEC.

63. Total external commitments on all these projects in Botswana currently amount to approximately \$1.3 million. The catalytic role played by the long-term programme was most obvious in the decision taken by the EEC and the Government in 1986 to concentrate financial and technical co-operation over the next four years on the development and conservation of natural resources, and to earmark 90 per cent of the total resources managed by the EEC for Botswana (approximately \$30 million) for these purposes. UNEP reviewed the long-term programme in 1986 and new activities were agreed upon with the Government, focusing on the problems of overgrazing and desertification. UNDP and the Government have also agreed to give prominence to environment and natural resource issues in the new UNDP country programme for Botswana.

64. The same approach to long-term programming and resource mobilization has been followed in Indonesia, Jordan, Peru, Papua New Guinea and Tunisia. During 1986, the Clearing-house co-ordinated the preparation of a programme on long-term issues relating to natural resources and the environment in the Amazonian region of Ecuador at the request of, and in co-operation with, the National Council for Development, and transmitted it to the Government.

65. The preparation of a regional action plan for environmental management in the Zambezi river basin involved the Governments of Finland, Norway and Sweden, which have significant co-operation programmes in the region. These Governments provided financial and technical resources for the formulation of the action plan, in addition to UNEP's own contribution.

66. During 1986, the Clearing-house identified through its long-term programming activities 1 additional operational project in Botswana, 8 projects in Ecuador, and 19 projects under the Zambezi action plan. Project formulation missions were organized in the Sudan and Uganda as a first step towards implementing the recommendations of the First African Ministerial Conference on the Environment. In addition, 14 projects were prepared for presentation to donors at the sixth session of the Consultative Group on Desertification Control scheduled for 1987, and 2 projects for presentation to AGFUND.

67. In 1986 operational projects identified or prepared with Clearing-house support were approved for financing by donors as follows:

- Two projects approved by Sweden for Botswana's long-term environment programme;
- One project approved by the Netherlands for Peru's long-term environmental management programme in the Upper Selva region;
- One project approved for financing by AGFUND for pollution control in Bahrain;
- Two projects on desertification control, in Egypt and Lesotho, presented to the fifth session of the Consultative Group in 1985, received financial commitments from the Federal Republic of Germany and UNDP;
- Six projects, part of Tunisia's national desertification control strategy prepared with UNEP, received commitments from UNDP, Algeria, the Federal Republic of Germany and the EEC.

68. The total volume of external funds (excluding recipient Government or UNEP funds) thus mobilized for operational activities in 1986 was approximately \$7 million, or nearly half the total volume of funds mobilized since 1982.

69. Short-term advisory services were provided directly by donors under arrangements with the Clearing-house, or financed through trust funds. In 1986, Guyana received advice on the preparation of an environmental impact study of a 3-MW hydroelectric project to be built next year on an international river. An environment code for Togo was submitted to the Government after one and a half years of work by a local team, co-ordinated by a UNEP consultant. Environmental issues in the Lake Tanganyika and Lake Victoria basins were investigated as preliminary steps towards the preparation of long-term action programmes for these two lakes. Short-term assistance was also provided to Burundi (environmental impacts on the ecosystem of Lake Tanganyika), Uganda (environmental legislation) and ASEAN (management of hazardous wastes).

70. Through two multilateral projects advice was provided in 1986 to five developing countries on the establishment of national registers of potentially toxic chemicals, and to three developing countries on the establishment of national soil reference collections. A third project for short-term assistance to Governments in the control of environmental health hazards was also prepared during the year under review.

Notes

1. General Assembly resolution 2997 (XXVII) of 15 December 1972, sect. II, para. 2 (d).
2. This document is being submitted to the Council in UNEP/GC.14/16.
3. A draft of the Environmental Perspective to the Year 2000 and Beyond is being submitted to the Council in UNEP/GC.14/14.
4. A more detailed account of co-operation between UNDP and UNEP is to be found in document UNEP/GC.14/24.
5. The numbers and figures quoted in paragraphs 14, 15 and 17 are based on commitments as of 31 December 1986. However, as final accounts will not be available till the end of March 1987, the numbers and figures are to be regarded as estimates.
6. For further details see chapter II above, paragraphs 6-7.
7. Further details may be found in chapter IV under budget subline 5102.
8. Co-operation with the international NGO community, which forms an important element of UNEP's "environmental outreach" programme, has already been described.
9. UNEP/GC.14/4/Add.3.
10. See *1985 Annual Report*, chap. III, para. 43.

Chapter IV

THE ENVIRONMENTAL PROGRAMME

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Environment and development

Environmental awareness

Earthwatch

Oceans

Water

Terrestrial ecosystems

Arid and semi-arid lands ecosystems and desertification control

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THE ENVIRONMENT PROGRAMME

INTRODUCTION

1. A detailed description of the genesis of the environment programme, and UNEP itself, appeared in the *1985 Annual Report* (chap. IV, paras. 1-14). The report highlighted the triangular arrangement of UNEP's programme activities, which, in keeping with the Stockholm Action Plan for the Human Environment, may be classified as environmental assessment (or Earthwatch), environmental management and supporting measures.
2. The structure of the UNEP secretariat has been modified as the organization has grown, to adapt it to changing requirements. However, change on a larger scale took place in 1986 as a result of an in-depth internal examination of all UNEP projects, past and present, which was carried out between September 1985 and August 1986.¹ The main aim of this evaluation exercise was to analyse UNEP's performance in the past and identify successes and failures, and to establish future orientations for UNEP's activities in the light of the lessons learnt.
3. Nearly 1,000 individual project evaluations were carried out by the programme officers concerned.² For each element of the programme the results of the individual evaluations were outlined for presentation to an in-house seminar as well as to a meeting with senior advisers and a representative group of permanent representatives, to UNEP, acting in their personal capacities, before being circulated to UN Member Governments, co-operating agencies and supporting organizations.
4. One of the major shortcomings highlighted by the review was that there had been very little follow-up to the use of project outputs. This, coupled with poorly written project documents, had often led to projects not having the desired results. To remedy the situation an internal seminar on ways and means of improving project design was held in 1986. Additionally, the Executive Director completely revised the UNEP Manual for the Design and Approval of Projects. The revised Manual provides clear guidelines on how to formulate objectives and achievement indicators and define target audiences, and stipulates that all project documents should feature follow-up activities as an integral part of the work plan as well as provision for an evaluation based on the information gathered during the follow-up activities.
5. On the basis of the findings of the internal evaluation exercise, a report on the future orientation of UNEP's work was prepared,³ outlining a number of proposals, notably:
 - (a) Concentrating world attention on a limited number of the most serious environmental problems and means of tackling them;
 - (b) Setting time-limited environmental goals to be reached by the world community—Governments and the UN system—by 1995.
 - (c) Setting subsidiary targets to be reached by UNEP by 1992, to allow a mid-term evaluation of the targets and progress towards them.

6. Of special significance to the Programme were the structural changes and other management decisions taken by the Executive Director on the basis of the results of the evaluation, including a restructuring of the Office of the Environment Programme into nine units, each with sufficient staff and administrative flexibility to enable it to function as an efficient multidisciplinary team. An organizational chart presenting the Office of the Programme as reorganized appears in figure 1. More details of the reorganization appear in chapter V below.

7. Although the administrative set-up of the Programme follows the triangular arrangement referred to above, the reporting on programme activities in the present chapter, in accordance with the established pattern, follows the structure of the programme budget for 1986-1987, which was submitted to the Council at its thirteenth session in May 1985 in document UNEP/GC.13/8. The situation will be redressed in the 1988 Annual Report which will report on the first year of the 1988-1989 biennium. The proposed programme budget for that biennium (UNEP/GC.14/16) follows essentially the triangular arrangement—Earthwatch, Management and Support.

8. This chapter is not designed to furnish a comprehensive picture of all the activities pursued by UNEP during 1986, and should be read in conjunction with the *Report on New Projects*. Further, comprehensive lists of all UNEP publications and papers issued in 1986 and of all UNEP meetings held in 1986 are to be found in annexes III and IV to the present report.

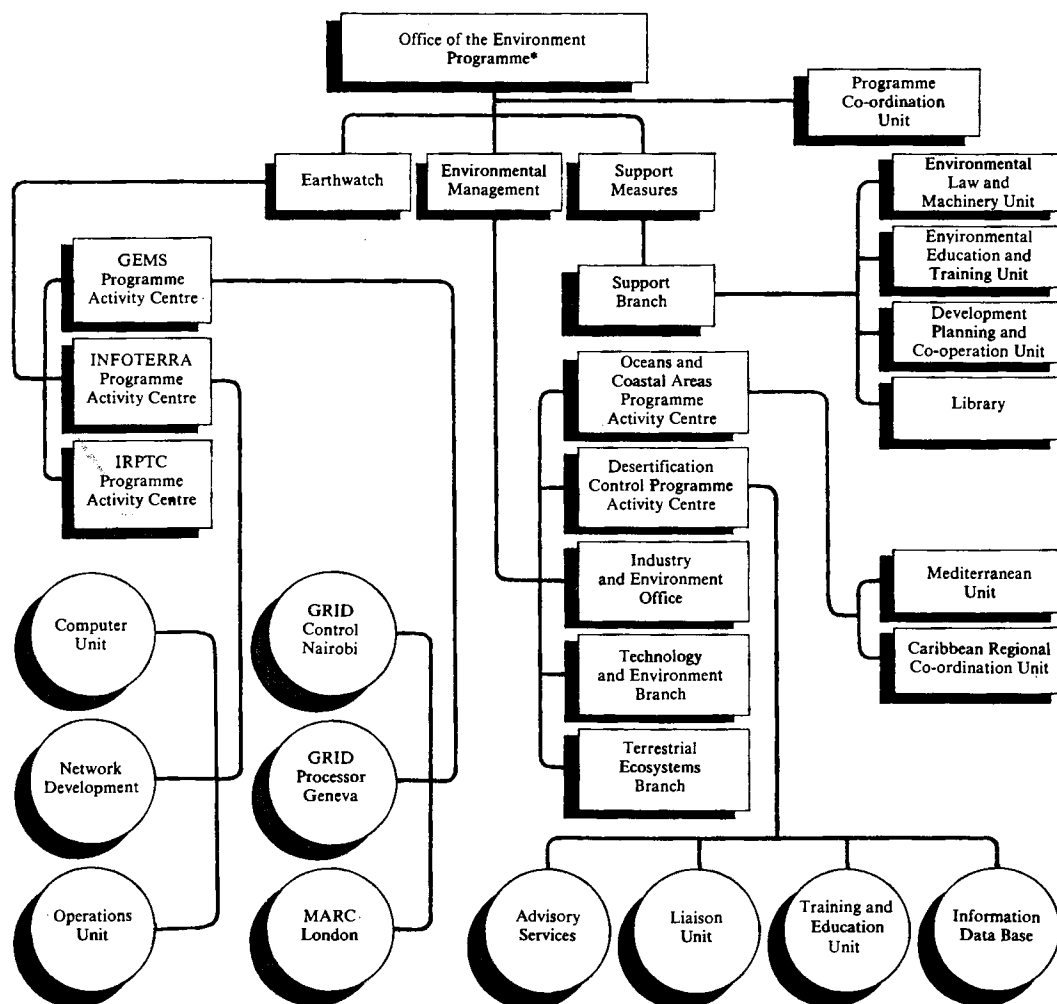
ENVIRONMENT AND DEVELOPMENT (Budget line 21)

9. This budget line includes the following sublines: (a) Integrated approach to environment and development; (b) Integration of environment in development planning and activities; (c) Energy; (d) Industry and transportation; (e) Environmental law and environmental machinery; and (f) Natural disasters.⁴

10. The first two of these sublines and the one relating to environmental law and machinery aim at providing guidance and frameworks on policy, methodology, procedures, institutional arrangements, legislation and regulation for considering and incorporating environmental aspects into development planning, co-operation and administration. It is now widely accepted that environmental protection and proper development are compatible and mutually supportive. In the long run, there can be no sustainable development without the rational management of our natural resources. It would be a misnomer to use the word "development" to describe a process that could threaten the life-support systems of our planet.

11. Because technology is constantly and rapidly changing, its environmental side-effects are often overlooked. And though the symptoms are subtle, the degradation of environmental quality by industrial production, heavily mechanized and chemically dependent agricultural production, and transport has reached dangerous and in some places even catastrophic levels. Thus, the economic panacea called technology, which so much of the world looks to as a saviour from poverty, can also act as a dangerous agent of environmental imbalance. Technology is both saint and sinner. The challenge facing UNEP is to encourage the saint and help to discourage the sinner. Under the sublines on energy and industry and transportation, UNEP provides guidance on environmentally sound patterns of energy use, production and industrialization.

Figure 1
OFFICE OF THE ENVIRONMENT PROGRAMME
ORGANIZATIONAL CHART



Integrated approach to environment and development (Budget subline 2101)

12. Though environmental consciousness has taken its rightful place in many professional disciplines during recent years, this development has not always been evident in the area of development planning. Development professionals too often regard environmental concern as an issue separate and independent from development, or even worse, as an obstacle to progress. UNEP's stand on the sometimes uneasy relationship between environment and development is uncompromising: sustainable development is impossible without taking environmental considerations into account at every level of planning. In fact, many environmental problems are triggered by lack of development or inappropriate development. One of UNEP's most important tasks, then, is to promote the concept of environment and development as a cohesive package.

13. Under the subline "Integrated approach to environment and development", UNEP provides information to decision makers and encourages and assists development planners to acquire the necessary skills and institutional capabilities to enable them to incorporate environmental considerations into their development planning. During 1986 a small group of high-level experts met to work out strategies in this area. They concluded that a selective approach was more practical than a general approach, and advocated the practical tactic of focusing on a major environmental problem and then putting in place the methodological, institutional and procedural elements to deal with it in a concerted way. Such a "hands-on" approach might be particularly useful in developing countries, the experts agreed, rather than a comprehensive challenge to planners to change overall planning styles.

14. One way to apply the selective approach is to tackle problems country by country. As one example, the Government of Cyprus, in collaboration with UNEP and UNDP, held a workshop in Nicosia in 1986 to analyse local needs and formulate effective strategies and policies for environmentally sound planning. Administrators, decision makers in sectoral and regional executing agencies and senior planners attended. The idea was to relate environmental objectives to development concerns and responsibilities and to help improve interdepartmental co-ordination for sustainable development. The experience gained from this workshop will be drawn on to guide other countries along the path of environmentally sound development.

15. As a continuation of work cited in the *1985 Annual Report*, UNEP, in co-operation with the World Bank, has been developing an analytical framework and guidelines on how changes in the stocks of natural resources in particular, and in the state of the environment in general, can be appropriately reflected in accounting for national income and well-being. A two-part fourth workshop of experts was held in Washington to explore to what extent national income accounts can be modified to include changes in environmental resources and conditions, and later in Paris to discuss whether, and how, specific environmental elements may be introduced into an economic accounting framework.

16. With a view to promoting the technique of integrated physical planning to help reconcile environmental, economic and social objectives at subnational levels, UNEP collaborated with the United Nations Centre for Regional Development (UNCRD) and the UN Department of Technical Co-operation for Development, as well as the newly established International Lake Environment Committee (ILEC), in preparing case-studies on regional development planning in the context of lake basin and river basin management.

17. UNEP has continued to participate in a programme to test the application of economic analysis to questions of dryland management. Jointly with the Government of Australia, the Commonwealth Secretariat and the East-West Center, UNEP convened an international conference of experts in Canberra on the economics of dryland degradation and rehabilitation. The conference was a first step in a process leading to preparation of

management guidelines, a technical manual and a case-study reader. By demonstrating the social and economic significance of the costs of dryland degradation and the benefits arising from its rehabilitation, it should be possible to exert a direct influence on the allocation of investment and aid resources to projects involving environmental management of drylands. A regional workshop for Asia and the Pacific on the same subject took place in New Delhi in August, and a national workshop for China was held in Beijing in September.

18. Using funds from this subline and the Soils subline, UNEP, in co-operation with the Government of Jamaica commenced work in 1986 to design a plan aimed at improving the environmental management of the Hope River basin in Jamaica in such a way as to foster the application of environmental impact assessment and social cost-benefit analysis methods to alternative approaches to river basin management. It is hoped that this programme will provide guidance for similar field projects.

Integration of environment in development planning and activities (Budget subline 2102)

19. Over the last eight years UNEP has collaborated with ECLAC in preparing analyses and case-studies, convening expert workshops and seminars and establishing a network of institutional and expert contacts aimed at improving co-operation among countries of the region in environmental planning and management for sustainable development. In the light of the emerging priorities in the region, UNEP and ECLAC have now launched a programme of preparing pre-feasibility studies of field projects to be implemented in selected countries of the region, in collaboration with the Governments concerned. The design of these projects is intended to help alleviate the economic burden in the region and at the same time improve environmental planning and management, particularly with regard to natural resources, through the establishment of mutual support between the employment, trade, income growth and environmental objectives of countries in the region.

20. UNEP, in collaboration with WHO, the United Kingdom Overseas Development Administration and the University of Aberdeen, organized a training seminar and a three-month intensive course on principles and application of environmental impact assessment. UNEP supported participation by 11 participants in the seminar and 3 participants in the course, representing 14 developing countries.

21. In June 1986 UNEP enabled experts from Burundi, Kenya, Malawi, the United Republic of Tanzania and Zimbabwe to participate in a workshop on "Environmental planning and management for local and regional development: Focus on training aspects derived from studies on inland water management" held in Otsu and Nagoya, Japan. The second part of the workshop specifically addressed the task of preparing a course outline and curriculum for a regular training course in environmental planning and management for local and regional development, to be established jointly by UNCRD and ILEC. UNCRD has also begun to devote part of its annual training course on regional development to environmental planning and management.

22. In order to enhance consideration of environmental factors in UNDP's country and regional programmes and technical co-operation projects, and potentially those of other development co-operation organizations as well, UNDP in co-operation with UNEP prepared two reports designed to bring about a progressive change in procedures and methods: "Comprehensive development strategies: the role of UNDP in environmental management" and "Procedural guidelines of UNDP for environmental management".

23. The seventh session of the Committee of International Development Institutions on the Environment (CIDIE), which was created in 1980, was held at UNEP headquarters in

May 1986.⁵ The Committee conducted its annual review of progress by the member institutions in implementing the CIDIE Declaration, and discussed an evaluation of achievements entitled "Action and interaction on environmental matters—the history and potential of CIDIE". The study is being redrafted in the light of the Committee's discussions, and will be finalized for commercial publication by the next CIDIE session, which is scheduled for March 1987 at IFAD headquarters.

24. The Committee also discussed a five-year programme of work aimed primarily at the exchange of information and co-ordination among CIDIE members. On the basis of comments received from the members, the secretariat (which is furnished by UNEP) will draw up a final work plan for consideration by CIDIE at its next session. It was agreed to initiate a series of environmentally related surveys and reports undertaken by one or more member institutions.

25. It was agreed that the secretariat should prepare and circulate to the CIDIE members a report containing an analysis of the policies and procedures followed by CIDIE members for the design and implementation of their development projects and programmes, identifying those policies, procedures and methodologies likely to be the most effective for integrating environmental concerns in their economic development activities. The report will be examined by the Committee at its next session.

26. During 1986 IFAD signed the Declaration of Environmental Policies and Procedures Relating to Economic Development and became the twelfth member of the Committee.

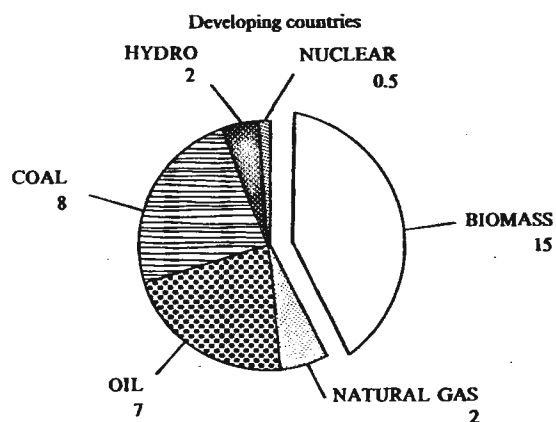
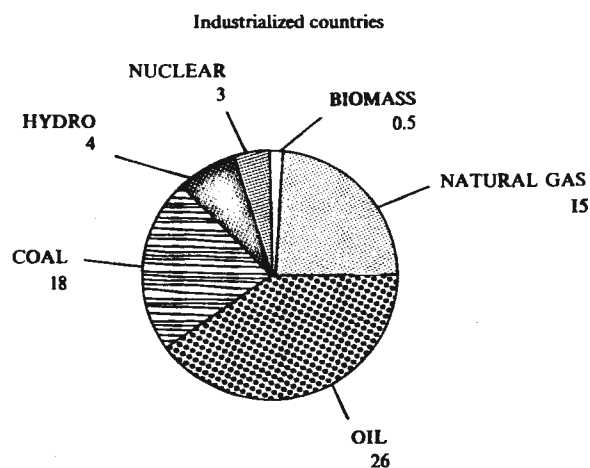
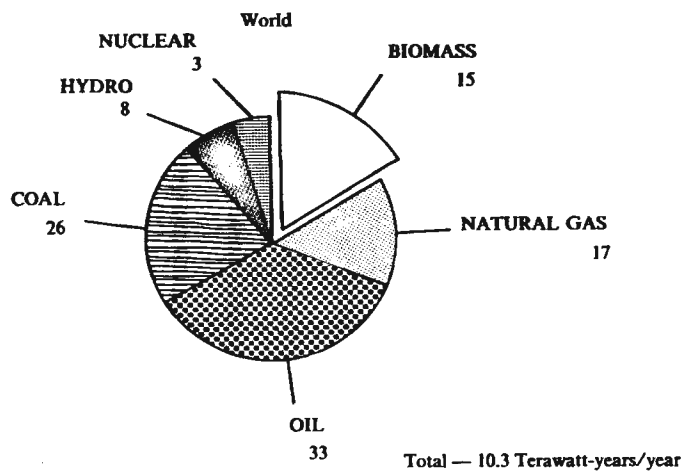
Energy (Budget subline 2103)

27. The unprecedented growth in energy consumption in the industrialized countries, and especially in the use of fossil fuels, has been accompanied by a critical rise in the associated environmental impacts, some of which now threaten the future prosperity of man and the stability of the environment at the local, regional and global levels. (Figure 2 shows the distribution of energy use in the world.) Acidification threatens lakes, soils and forests as well as man-made structures. Increasing concentrations of carbon dioxide and other "greenhouse gases" in the atmosphere may lead to irreversible climatic changes. In the developing countries, the main energy-related environmental problems result from the unsustainable use of biomass resources, such as excessive tree-felling. Figure 3 illustrates the extent of this problem in Africa. Deforestation frequently leads to desertification, and even higher pressure on the remaining biomass resources. Indoor cooking on open fires is often extremely inefficient, as figure 4 shows, and is also a major health hazard in developing countries.

28. Despite uncertainties regarding the environmental implications of our present patterns of energy production and use, enough is known to prompt action to mitigate future adverse impacts, and, whenever possible to prevent the more dangerous ones entirely. To contribute to a better understanding of the environmental implications of our energy consumption patterns and to ensure the timely transition to a system of sustainable and environmentally sound energy utilization, UNEP undertakes studies and collects and disseminates information on the environmental impacts of all sources of energy, for the benefit of all countries, and promotes energy conservation measures and the development and demonstration of environmentally sound ways of using new and renewable sources of energy in developing countries, where little financial and institutional capacity exists in support of such activities.

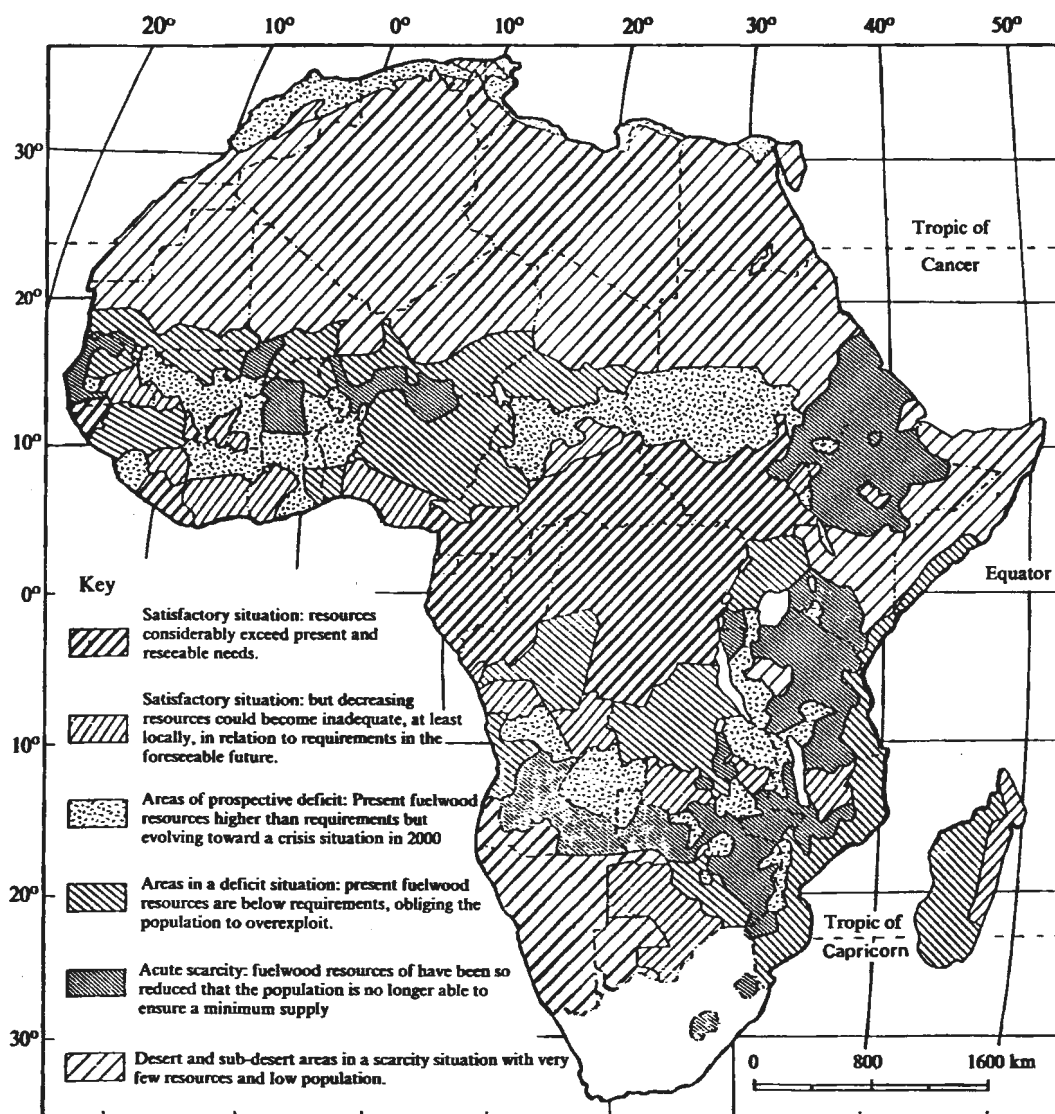
29. During the period under review, a report entitled "Assessment of tools and methods for incorporating the environmental factor into energy planning and decision-making" was

Figure 2.
Global distribution of primary energy use, 1985



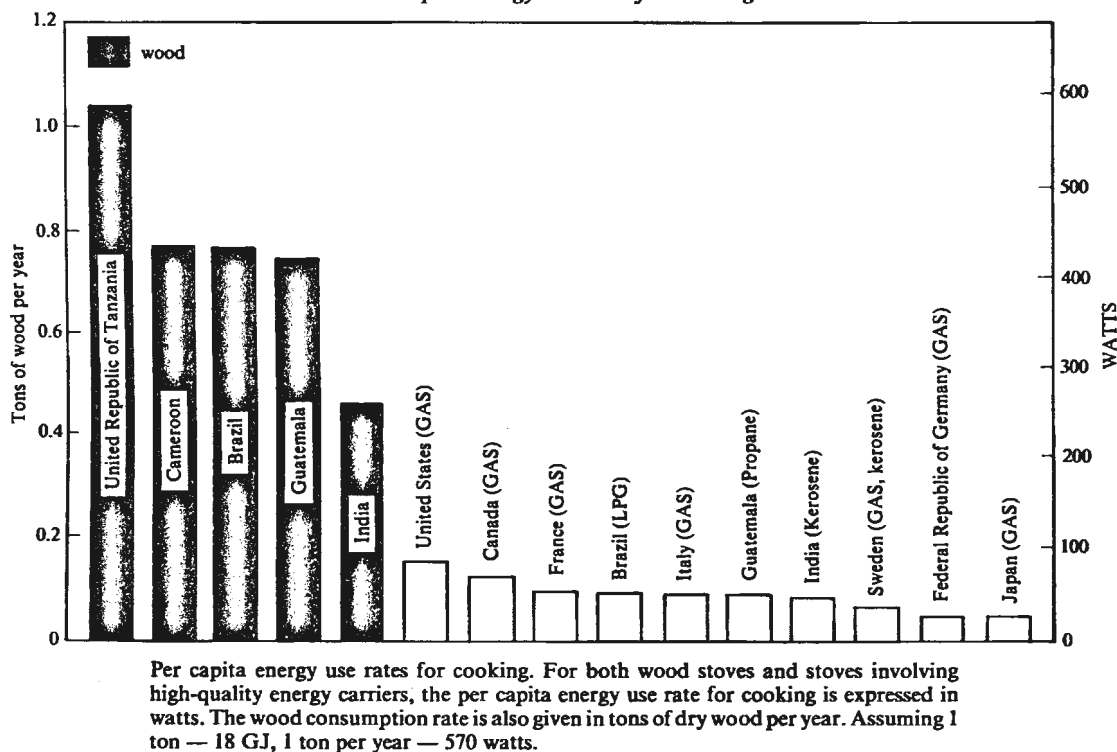
Source: From Report of the Advisory Panel on Energy and Sustainable Development to the World Commission on Environment and Development (Geneva, 1986).

Figure 3.
Firewood availability in Africa present and future



Source: From Asit K. Biswas, "Renewable energy and environment policies in Africa", *Energy Policy*, Vol. 14, No.3 (June 1986).

Figure 4.
Per capita energy use rates for cooking



Source: From R.H. Williams, "Potential roles for bio-energy in an energy-efficient world," *Ambio*, vol. XIV No. 4-5, 1985.

published. It concludes that, although several models exist that allow the environmental implications of different energy scenarios to enter into and influence the planning choice, these models have been little used by planners and decision makers owing to their complex political and technical nature. The use of less comprehensive models suitable for concrete situations is examined, and efforts are being made to try to develop them.

30. UNEP, WHO and IAEA have agreed in principle to establish an inter-agency project on "Assessing and managing health and environmental risks from energy and other complex industrial systems". The intention is to undertake case-studies of environmental and health impacts associated with the production and use of energy and with other industrial systems in different parts of the world, in order to arrive at common guidelines for the management of risk.

31. In the area of energy conservation and development of new and renewable sources of energy, an expert group meeting was held in Bahrain on energy conservation in Western Asia. Progress was also made in a project on environmental impacts of fuelwood utilization in rural areas of Bolivia and Brazil. In Bolivia, the Ministry of Energy and Hydrocarbons has selected the area of Chuquisaca for fuelwood plantations and distribution of improved stoves. A fuelwood plantation established in 1985 in Minas Gerais in Brazil is doing well, and the implementing organization has developed an improved stove which is being installed in village households.

32. As a follow-up to the UNEP/Bellerive Foundation project on efficient utilization of fuelwood in rural areas in Kenya, UNEP has initiated a project to evaluate a selected number of improved fuelwood stoves developed under this and other projects. The evaluation is being undertaken by the Appropriate Technology Centre in Kenyatta University in Kenya. The results will be distributed to governmental and non-governmental organizations with a programme in the field, and used as a tool in the implementation of the Cairo Programme for African Co-operation adopted by the First African Ministerial Conference on the Environment.

Industry and transportation (Budget subline 2104)

33. There is growing concern in developing countries about the harmful environmental effects of pursuing industrialization without regard to environmental management, particularly the rational use of resources. As more and more countries suffer the environmental consequences of industrial development, the once widespread sentiment that pollution is a small price to pay for development is rapidly disappearing. UNEP has a major role to play in solving the problem relating to the lack of information and trained manpower in this important field.

34. During 1986 UNEP continued to focus on the provision of information and training for plant managers and government decision makers. Various sets of guidelines on environmentally sound industrial development were drawn up, and relevant information was collected for storing in the computerized data base of the UNEP Industry and Environment Office. Those activities were carried out in close co-operation with industry and Governments. The support of industry is enlisted through consultations between experts within industry, government and international organizations, and a highly specialized computer data base on industrial environmental management enables the Industry and Environment Office to supply specific information readily upon request.

35. During the year, the Industry and Environment Office further expanded its computerized data base with the addition of approximately 1,200 new bibliographical entries and nearly 100 files on pollution abatement and control technology (figures 5 and 6 indicate the breakdown of queries received by the Office in terms of subjects and sectors).

36. In November 1986, representatives of the secretariats of UNIDO and UNEP held their sixth annual consultation to review co-operation towards their agreed aims of environmentally sound industrial development. Among potential joint programme activities were low-waste and non-waste technologies, small-scale and medium-scale industries and environmental impact assessment.

37. UNEP publications on alumina production formed a major input for an international workshop on bauxite residues organized by UNIDO and the University of the West Indies in Jamaica in October 1986. The guidelines for environmental management of aluminium smelters formed the basis of a multiregional training workshop sponsored by UNEP and the International Primary Aluminium Institute in co-operation with the Dubai Aluminium Company in Dubai in December. Other technical publications will form the basis of training activities relating to nickel and iron and steel in the next biennium.

38. During 1986 the World Bank, WHO and UNEP co-operated in a joint project to prepare a manual on the safe disposal of hazardous wastes, with particular reference to the problems of developing countries. The manual, the first draft of which was sent for external review by government and industry experts in November 1986, has three main purposes. First, it will provide sufficient information to enable senior technical personnel within

Figure 5.
Breakdown of queries by subject

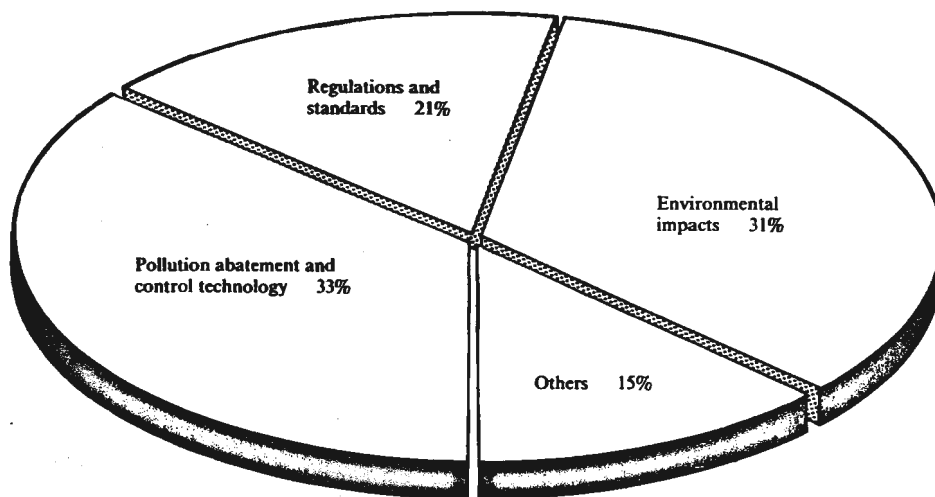
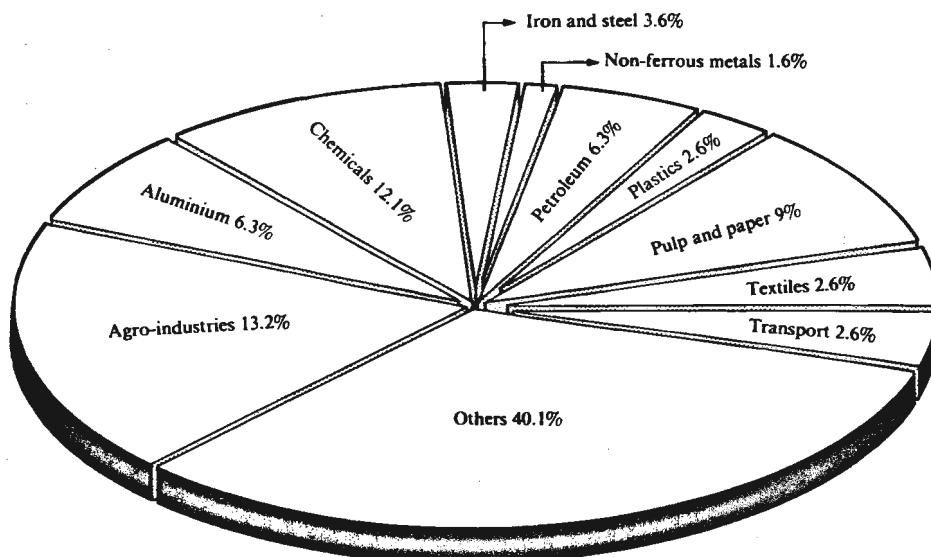


Figure 6.
Breakdown of queries by sector



government and industry to evaluate their own countries' needs and prepare a short list of appropriate measures. Secondly, it will assist funding organizations to identify, prepare and appraise "stand-alone" projects and those involving a hazardous-waste-management component. Finally, the manual will be used for national and international training courses aimed at senior and middle management within government and industry, particularly in developing countries.

39. During 1986 UNEP initiated work with WTO to prepare a publication on tourism-carrying capacity, with special attention to coastal and island tourism. The publication, which should be completed during 1987, will offer an overview of environmental problems in the tourism industry and their possible solutions. At the same time, it will illustrate methodological approaches to determining the tourism-carrying capacity of coastal and island ecosystems.

40. As mentioned earlier (chap. III, para. 50), the UNEP Industry and Environment Office arranged in 1986 for a number of industrial experts to visit developing countries, to diagnose environmental problems of specific industries.

Environmental law and environmental machinery (Budget subline 2105)

41. UNEP's efforts to foster the development and enforcement of environmental law in key substantive areas of global, regional and national concern take four principal forms: it promotes the development or adoption of new agreements, principles or guidelines concerning specific environmental problems; it seeks the ratification and enforcement of existing international legal instruments in the field of the environment; it assists individual States in formulating national environmental legislation and machinery; and it collates and disseminates current information about the global status of environmental law.

42. One area of focus is industrial chemicals and hazardous wastes. Inadequate knowledge of the properties of potentially harmful chemicals raises serious concern for developing countries in particular. IRPTC, in addition to its own specific activities (see below, under budget subline 7102), is providing technical support for the development of guidelines and eventually legal instruments pertaining to chemicals. Meanwhile, a lack of legislation and enforcement capabilities leave developing countries particularly vulnerable to the risks involved in hazardous waste disposal. Increased efforts are needed in both the legal and technical domains to develop capacities for proper handling of hazardous wastes.

43. 1986 has been a year of consolidation and hard work, building upon the adoption in 1985 of a global convention on the protection of the ozone layer and international guidelines on hazardous wastes and marine pollution from land-based sources. Working groups in 1986 sought to develop the technical and legal instruments necessary to put into practice the ideas embodied in the convention and the guidelines, as well as to develop principles and guidelines in other key substantive areas.

44. The Vienna Convention for the Protection of the Ozone Layer has been signed by 27 Governments and the EEC, and ratified or accepted by 7 Governments. Building upon the Convention, a two-part Workshop on the Control of Chlorofluorocarbons was held in May and September and provided inputs for the first session of the *Ad hoc* Working Group of Legal and Technical Experts for the Preparation of a Protocol on Chlorofluorocarbons to the Convention, which was held in Geneva in December 1986. The goal of the Working Group is to develop a protocol for adoption in 1987.

45. Many countries and organizations have provided detailed comments on the draft guidelines for the exchange of information on potentially harmful chemicals, particularly pesticides, in international trade. A working group, established in 1983, has held two meetings (1984, 1985) on this subject. During 1986, UNEP compiled further comments and proposals in preparation for a third meeting of working group, scheduled for early 1987, at which time the group will seek to develop a finalized set of guidelines.

46. The Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Wastes, adopted by the *Ad hoc* Working Group of Experts on the Environmentally Sound Management of Hazardous Wastes at its third session in Cairo in December 1985, were circulated to Governments and organizations for their comments. The replies received indicate that there is a continuing need for information on management of hazardous wastes in developing countries, that all countries would benefit from the development of a code of conduct in this area, and that a global legal instrument should be promulgated concerning the transfrontier movement of hazardous wastes.

47. A revised and updated version of the Register of International Treaties and Other Agreements in the Field of the Environment was prepared in 1986.⁶ Comments were solicited from Governments to ascertain progress in implementing the 1978 principles relating to shared natural resources and offshore mining and drilling.⁷ Progress in the area of regional seas conventions and protocols is reported below under budget subline 5102 (Regional seas).

Natural disasters (Budget subline 2106)

48. In 1986 the Executive Director continued to exercise maximum restraint in allocating resources to this area, in accordance with Governing Council decision 11/7. As a consequence, no new activities were undertaken.

ENVIRONMENTAL AWARENESS (Budget line 31)

49. This budget line is divided into four sublines: (a) Environmental education; (b) Environmental training; (c) Public information; and (d) State of the environment and environmental data.

Environmental education (Budget subline 3101)

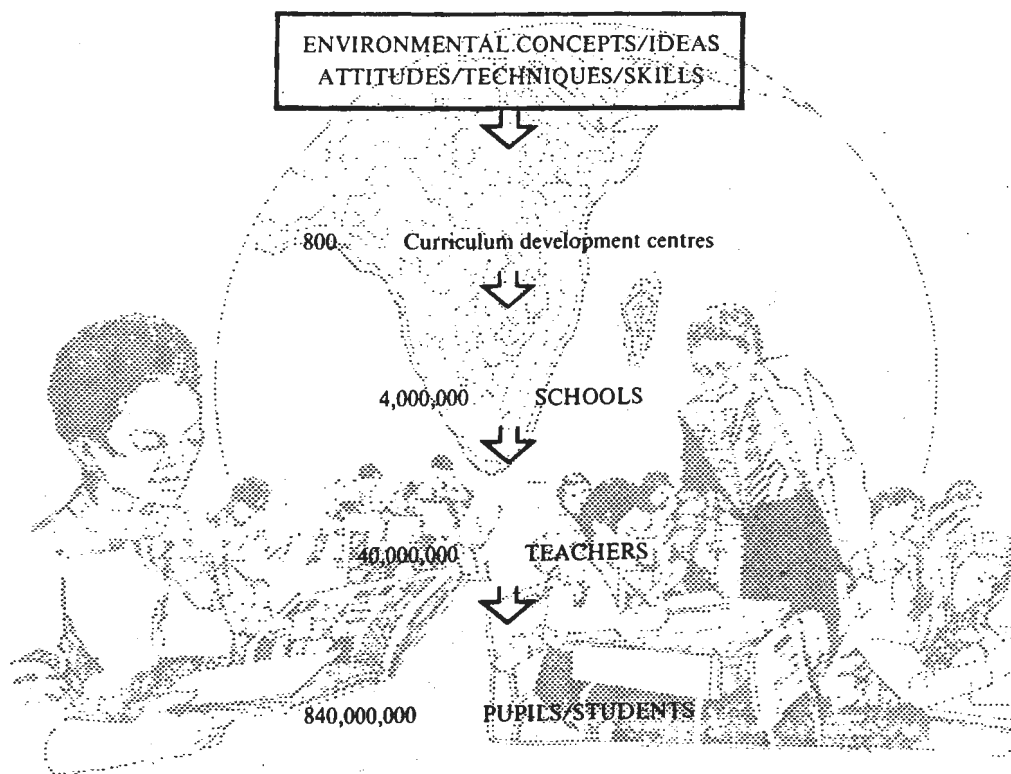
50. The interaction of humanity and the environment has created enormous environmental problems which threaten to disrupt natural ecological balances and even destroy human life. Most of us want development that is environmentally sustainable, but how can we achieve sustainable development? How does the average citizen, the farmer, the worker, the professional, the decision maker know which course of action is based on sound environmental principles? The results of environmental research, monitoring and assessment are of little use unless they are conveyed to people in a way they can understand and adopt. This is the role of environmental education and training. If action is the present, education is the future.

51. In fulfilling their responsibilities as co-ordinators of environmental education activities in the UN system, UNEP and UNESCO have continued the joint International Environmental Education Programme (IEEP), which has become the major international vehicle for the promotion of environmental education at the local, national, regional and

global levels. In 1986 as in previous years, IEEP held conferences, seminars and workshops for teachers, teacher trainers, curriculum developers, educational administrators and others. Particular emphasis is placed on curriculum development, since through curriculum development centres, a potential total of 840 million pupils and students throughout the world can be reached to pass on vital environmental concepts (see figure 7). IEEP has also published and distributed environmental education literature and provided technical assistance to Governments interested in incorporating environmental education into their systems. By the end of 1986 more than 140 countries, 10,000 educators and 250,000 pupils had been directly involved in IEEP; the number of those indirectly involved was, of course, much larger.

52. However, the impetus provided by the 1977 Tbilisi conference on environmental education seems to have been dissipated. Consequently, in 1986 UNEP initiated planning for a follow-up international conference on environmental education and training, which is to be held in Moscow in 1987, to create a fresh strategy for co-operation in this area.

Figure 7.
*Curriculum development centres as channels for the
environmental education of the world's in-school youth*



53. Activities carried out during 1986 under IEEP Phase IV included numerous workshops and consultation sessions. For example, a consultation meeting on the incorporation of environmental education into curriculum and teacher training for industrial and agricultural schools was organized in Singapore in March. IEEP ran a subregional workshop on teacher training in environmental education for Arab States in January in Bahrain, in co-operation with the Bahrain National Commission for UNESCO and the Arab Regional Office of United Schools International. In collaboration with La Serena University in Chile, IEEP co-ordinated a subregional workshop on teacher training in environmental education for Latin America in January in Santiago. A subregional workshop on teacher training in environmental education in Africa took place in April in Nairobi, organized in collaboration with the Kenya Science Teachers' College.

54. UNEP also provided technical and financial support to national workshops. For instance, in March 1986 two workshops were held in the Dominican Republic. One, attended by 40 educators, was aimed at the analysis and adaptation of the IEEP module on teacher training for primary level. The other, aimed at the creation of content and methods of environmental education for training primary school teachers, was attended by 30 educators.

Environmental training (Budget subline 3102)

55. UNEP's policy and activities in the area of environmental training are designed to promote acceptance of the concept of sustainable development. The broad aim of training is to enhance the ability of all countries, and particularly developing ones, to tackle the environmental issues they face, and in pursuing this aim UNEP includes a training component in all its projects.

56. Environmental training has two basic forms: general and specialized. General training attempts to build awareness of the environment and to develop individual or corporate capabilities to deal with environmental concerns. The target group for general environmental training includes policy makers and planners, engineers, architects, industrialists, trade unionists and agriculturalists. Specialized training seeks to perfect the problem-solving skills of professionals whose work directly or indirectly affects the environment, to enable them to work on environmental issues specific to their profession. The target group for specialized training includes biologists, ecologists, soil scientists, agronomists, foresters, oceanographers and landscape architects.

57. UNEP utilizes short in-service courses (mainly for general training), workshops and on-the-job training, practical site demonstrations and, for in-depth training, post-graduate programmes for people nominated by their Governments who are already employed in key positions (and who will provide environmentally sound services to their countries on their return).

58. During 1986 many activities contributed to UNEP's training goals. One was the continuation of the annual international post-graduate course on resource management and environmental impact assessment in developing countries, organized at the Technical University of Dresden by UNEP, UNESCO and the Government of the German Democratic Republic. Under a UNEP/ILO project, a national seminar on the working and general environment was held in Nairobi in November. It was attended by 28 participants and utilized for the first time the modules prepared by ILO and UNEP for the environmental training of employers. About 20 such national seminars are planned between 1987 and 1989.

59. UNEP's direct support of a project for the establishment of a network of environmental training institutions for Latin America and the Caribbean ended in December 1985. A new

phase was sanctioned following the meeting of focal points of the Environmental Training Network held in Caracas in December 1985. The focal points identified measures for the continued operation of the Network, including Governments' contributions in cash, fellowships and personnel, as well as funding for courses, workshops and seminars. On 26 August 1986, UNEP signed a formal co-operation agreement with the Mexican Government, under which the Government is to finance the Network's co-ordination machinery for a period of two years. A Regional Co-ordinator and an Adviser were then appointed. The Co-ordinator will help in the compilation of information on courses, seminars and other activities and the preparation of a calendar of available educational programmes.

60. Under the UNEP/ILO project entitled "Introduction of an environmental training component within ILO management development programme", several activities took place in the year under review. Many Latin American countries were visited to investigate local problems and assist in planning future activities in this area. Efforts were made to reinforce the use of the environmental management training materials known as "Flexible learning packages" adapt them to local conditions and finalize their translation into Spanish.

Public information (Budget subline 3103)

61. By mid-1986, UNEP's Information Service had initiated activities on all the proposals put forward by the UNEP Information Advisory Committee at its first meeting in 1985 (1985 *Annual Report*, chap. IV, para. 68). These activities included studies of alternative methods of communication, monitoring of media coverage of environmental issues, and the production of radio programmes designed to promote UNEP's identity. Other responses to the proposals are described below.

62. In order to increase awareness of major environmental events, a News and Data Team was established in July 1986. One of the Team's major tasks is to provide the media with timely comments on major environmental events and to respond to journalists' inquiries. The Team is also functioning as a "reaction desk", monitoring the media and evaluating trends in the coverage of environmental issues. It has established a computerized data base on UNEP policy and environmental events, concentrating on six major environmental issues: soil loss, destruction of tropical forests, desertification, climate change, fresh water supply and sanitation, and toxic chemicals. Between its establishment in July 1986 and the end of the year, the Team had prepared and disseminated 20 press releases, 10 feature releases and 30 information releases; additionally, it organized 5 press briefings.

63. A positive evaluation of UNEP's first Journalist Attachment Programme, held in 1985, led to the organization of two further such programmes in 1986. The first, held in Nairobi in May 1986 for 14 journalists, 10 of whom went on a field visit to anti-desertification projects in Ethiopia, generated almost immediately 20 newspaper/magazine articles, 2 radio programmes and preparatory field work for a television film. One participant subsequently received financial support from his newspaper to conduct a regional journalists' symposium on the environment. The second programme, organized in Nairobi in October in collaboration with the Union of African Journalists, brought 11 top journalists from 10 African countries to UNEP headquarters. Through these attachment programmes, UNEP is attempting to instil basic understanding of the importance of proper environmental management for sustainable development and to underline the potential contribution of the media to the attainment of that development.

64. During the year, six issues of *UNEP News* (in English, French and Spanish) and four issues of *The Siren*, the bulletin of the regional seas programme (in English, French and

Spanish), were produced in-house for public distribution. To reinforce the UNEP marketing identity, all UNEP sales publications issued in 1986 bore a uniform design. Better targeting of UNEP sales publications was achieved with the help of the UN sales and marketing services in Geneva. Print run reductions, based on pre-publishing market estimates, made it possible to reduce publishing costs.

65. The promotion of UNEP publications was increased through reviews of new UNEP publications in *UNEP News* and the issue of press releases, as well as through the inclusion of UNEP titles in a catalogue of United Nations publications prepared in 1986. A thorough study was made of UNEP distribution facilities with a view to developing systems and procedures for better and more effective targeting of UNEP free publications. A new mailing list data base, due to become operational by the autumn of 1987, was also compiled.

66. Bilateral publications and information support projects with the Soviet Union and China continued to function successfully in 1986. The information and especially the audio-visual support content of the UNEP/USSR project was enhanced. The UNEP/China project continued to publish *World Environment*, a quarterly illustrated bulletin in Chinese. A major success was the publication of 50,000 copies of the Chinese edition of *The Lorax*—an illustrated children's book on the environment by Theodor Geisel (Dr. Seuss).

67. A set of three posters was prepared on the theme "Peace—naturally" in support of the International Year of Peace and World Environment Day 1986. The posters were widely disseminated, with assistance from the UN Department of Public Information, simultaneously in Ottawa (at the World Environment Day celebrations), Vancouver (Expo 86), New York and Geneva.

68. In 1986, World Environment Day (5 June) was observed in at least 87 countries, an increase of some 20 per cent over 1985. Those 87 countries contain more than 80 per cent of the world's population. The Information Service prepared and dispatched to Governments, media and NGOs 6,000 copies of a media kit on the theme "Environment and peace" containing the Executive Director's World Environment Day message, articles and illustrative material, as well as the Youth Environmental Agenda prepared as a follow-up to the 1985 Environment Day message. Heads of State and Government and religious leaders joined in commemorating the Day by taking part in a "Global Ceremony to Plant a Tree for Peace". Twenty-eight Heads of State and Government gave their support, as did Pope John Paul II and the President of the World Fellowship of Buddhists.

69. UNEP helped to create five environmental messages for the purpose of harnessing an existing educational tool—the back covers of school exercise books. An example of one of the messages appears on the opposite page. These messages now appear on over 3 million exercise books in Kenya. They have been translated into Arabic and French. Egypt, the Sudan, Tunisia and Uganda are preparing to release similar messages, adapted to their environmental needs.

70. During the year UNEP also prepared an exhibition, in Arabic, English, French and Spanish, on the theme of "Environmental refugees" which was displayed at the Vancouver Expo 86 and at UNEP headquarters for World Environment Day 1986.

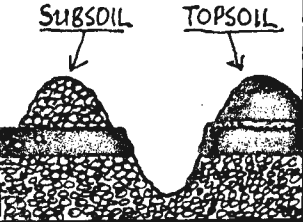
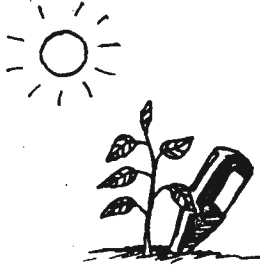
Television Trust for the Environment

71. Coverage of third world environmental issues dominated the Trust's programme output in 1986. A one-hour omnibus edition of the programme *Seeds of Hope* and two one-hour analytical documentaries by the BBC dealt with the issue of soil erosion. Other subjects dealt with in various programmes included human settlements, tropical deforestation

We care for our environment no.1

YOU CAN PLANT A TREE

PLANTING A YOUNG TREE AND HELPING IT GROW CAN BE FUN AND WILL NOT TAKE YOU LONG....

GET A SEEDLING FROM SOMEONE WHO HAS A TREE NURSERY. 	CHOOSE A GOOD SITE TO PLANT IT AND DIG A HOLE... 	SEPARATE THE TOP SOIL FROM THE SUBSOIL 
PLANT YOUR TREE AND MAKE THE ROOTS COMFORTABLE PUT THE TOPSOIL AROUND THE ROOTS. 	IF IT IS DRY, GIVE IT ENOUGH WATER 	VISIT YOUR TREE REGULARLY TO SEE THAT IT IS GROWING HEALTHY. 

SOMEONE WHO KNOWS ABOUT TREES CAN HELP YOU PICK A GOOD TYPE FOR YOUR AREA. ASK A TEACHER OR A FARMER FOR MORE INFORMATION



A MESSAGE FROM THE UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)

(Sponsored by Kartasi Industries - Nairobi)

SIZE: 162 mm x 203 mm

and desertification. In many cases, the Trust secured rights to distribute films free of charge to developing nations. With a view to reducing costs, the Trust also became involved in re-editing existing film footage for new programmes. For example, three films were co-produced with Jordan Television for free distribution in the first instance to Arabic-speaking countries.

72. One of the Trust's most significant achievements was to be involved with Central Television in a programme on acid rain which was broadcast in nine European countries in November 1986. Arrangements were also finalized to complete film projects in Brazil, China, Oman and Thailand. In the coming year the Trust intends to step up its involvement with third world broadcasting organizations.

73. The Trust also published a critical guide to environmental films in May 1986 and a study, commissioned by UNESCO, of the television coverage of the Ethiopian famine. UNEP's policy is to continue to use the Trust to mobilize more funds to make and disseminate high-quality television programmes, and to give it maximum encouragement to implement its policy of building up programme-making capacities in the third world and, through its developing network, to give those programme makers access to an international audience.

State of the environment and environmental data (Budget subline 3105)

74. The Executive Director's 1986 report on the state of the environment, dealing with environment and health, is being submitted to the Governing Council at its fourteenth session (UNEP/GC.14/5). The report covers quality-of-life indicators, and the impact of water-borne diseases, food production, energy, industry, chemical and toxic wastes, climatic change, human settlements and natural disasters, and ends with recommendations for action.

75. Another report, prepared during 1986 in response to Governing Council decision 13/9 B, deals with emerging environmental issues—specifically aquaculture and municipal solid waste in developing countries. It also contains an analysis of emerging environmental issues of global significance which fall within the purview of the Programme's activities, and an updating of previously reported emerging issues for which significant additional information has since been published. The report is being submitted to the Governing Council at its fourteenth session in document UNEP/GC.14/9.

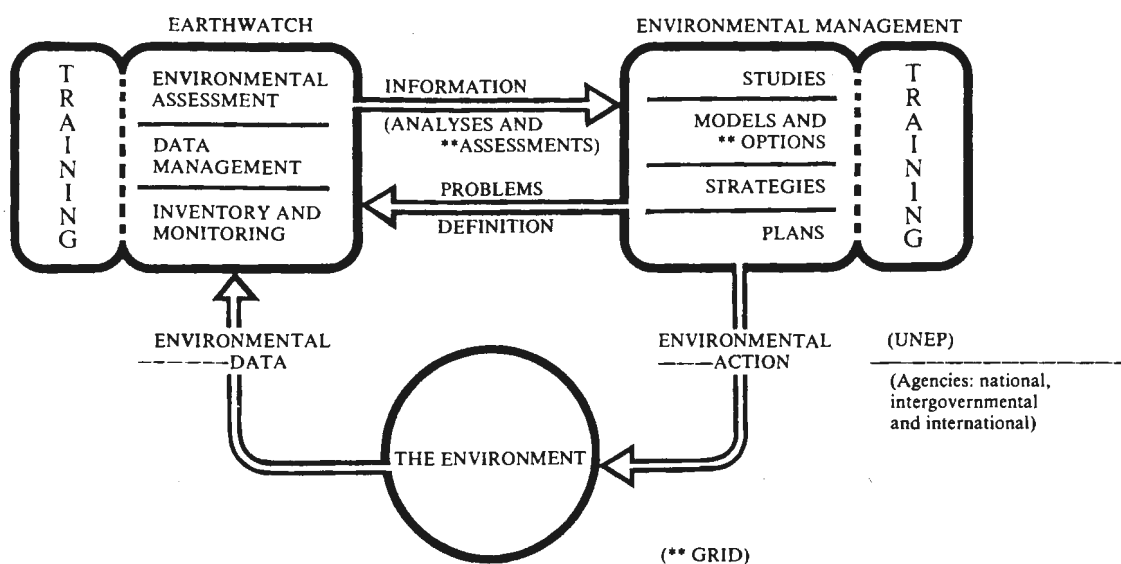
76. In addition to assisting countries to prepare national state-of-the-environment reports, in accordance with the guidelines published in 1985 (*1985 Annual Report*, chap. IV, para. 101),⁸ UNEP prepared during 1986 the 1987 state-of-the-environment report, the first world state-of-the-environment report (UNEP/GC.14/6). The report contains a comprehensive survey drawing on data and results of assessments available through GEMS as well as data and literature from other UN bodies and scientific sources. Additionally, a report on environmental events (UNEP/GC.14/10) was prepared, which constitutes an effort to describe, analyse and draw lessons from the exceptionally serious incident that took place at Chernobyl in the USSR in April 1986, other significant nuclear accidents that occurred during 1985 and 1986, the accident that took place at the Sandoz chemical plant near Basel in November 1986, and the two chemical spills near the Gulf of Finland in January 1987. The main environmental events reported in the news media and scientific journals have been collected on a regular basis, summarized and the summaries published in the bimonthly *UNEP News* since January 1985.

EARTHWATCH (Budget line 41)

77. Over the past two years, the components of UNEP's environmental assessment arm, Earthwatch, have begun to look more like a team than a collection of individual players. Admittedly, GEMS, INFOTERRA and IRPTC still function as independent Programme Activity Centres, and GRID, the Global Resource Information Data Base, is emerging as a crucial sub-element of the Programme. However, increased dialogue and exchange of experience and operational knowledge are leading to increased co-ordination. Interlinkages have been strengthened, for example, with the designation of GRID as an INFOTERRA Special Sectoral Source, IRPTC's continued close co-operation with the IPCS Health Criteria Programme, and discussions between IRPTC, INFOTERRA and GRID on data release policy. In addition, Outer Limits (which might more appropriately be called "Atmosphere") and Environmental Data are now considered to be key components of Earthwatch and have been merged into the Global Environmental Monitoring System.

78. At the same time, the realization has been growing that the assessment process must begin to provide information useful to a range of users wider than small groups of specialist scientists. However convincing the theory of the flow of environmental data (figure 8), from inventory and monitoring through a system such as GRID to technical analyses or more comprehensive assessments, in practice, wagon-loads of frequently inadequate data shunter along rusty tramlines often to the wrong destination. Earthwatch is trying to facilitate and accelerate the flow of environmental information, from the places where the problems are the most acute to the agencies which have the most power for action, and back again in the process of problem-solving.

Figure 8.
The flow of environmental data



The Global Environmental Monitoring System (GEMS) (Budget subline 4101)

79. The seven interrelated areas of concentration within GEMS are: (a) renewable resource monitoring; (b) climate-related monitoring; (c) health-related monitoring; (d) long-range transboundary pollution monitoring; (e) integrated monitoring; (f) ocean monitoring; and (g) GRID, the Global Resource Information Data Base.

Renewable resource monitoring

80. In December 1986, UNEP co-hosted in Nairobi the twentieth annual International Symposium on Remote Sensing of the Environment. More than 500 technicians, scientists and decision makers from 42 countries focused on the use of remote sensing for decision-making in the African context, particularly for resource analyses and assessments, and for early warning. High-level contributions from ECA and USAID stressed the need for timely applications of remote sensing data to Africa's problems, a point forcefully brought home in the Executive Director's keynote address to the Symposium.

81. The UNEP project on "Ecological monitoring of land degradation" on the eastern slopes of the Peruvian Andes is providing local management bodies with a unique and timely picture of production systems, land use changes and land degradation processes in the 8,000-square-kilometre study area. This project reflects the changing philosophy of ecological monitoring projects, by highlighting efforts to strengthen local capabilities in providing local management authorities with information analyses. The Peruvian National Institute for Natural Resources Evaluation is hoping to expand the monitoring effort into a country-wide resource monitoring network, rather like that of the Kenya Rangeland Ecological Monitoring Unit. The Peruvian project manager spent several weeks in technical discussions and field work with Kenyan specialists: another example of technical co-operation among developing countries sponsored by UNEP.

Climate-related monitoring

82. Climate, perhaps more than any other set of environmental variables, moulds the forms of life on Earth, from the shape of the simplest organism to the nature of the socio-economic activities of an entire nation. Man, unlike most other species, has been able to adapt continually to the impacts of climate on his food and fibre production systems: this is why we thrive or at least survive in a wide range of climatic types. As the Earth grows more crowded and political boundaries preclude major human migrations, many of us are at the mercy of the regional climate and its whims. Studying drought and its causative factors requires a global climate data base. By monitoring the global climate system and diagnosing the linkages between fluctuations in the system and regional weather, drought prediction can be improved.

83. Recent studies of the African drought suggest that there is no clear cycle or predictable trend in rainfall. Climatologists cannot yet tell us that next year will be wetter or drier because of a 5-year, or 10-year, or 17-year cycle. There are, however, patterns which begin to come into focus when the data from long-term monitoring are examined. Climatologists are beginning to be able to say something like: on the basis of the pattern of rainfall over the last few years, compared to patterns identified in the past, there is a certain probability that next year will be wetter or drier. Armed with such information, planners can begin to formulate realistic and relatively low-risk farming, irrigating and herding strategies. The necessary patterns can only be deduced from a long time-series of monitored data.

84. Despite the vicissitudes of rainfall, there is evidence for repetitive, and partly predictable phenomena. The El Niño/Southern Oscillation is a major fluctuation in the global climate system of significant, world-wide social and economic impact. It occurs every two to seven years as a result of complex atmosphere-ocean interactions, largely in the form of heat and gas exchanges. A 10-year international programme to investigate such interactions is in its second year as part of GEMS climate system monitoring activities. The global climate system is being systematically monitored and climate information disseminated internationally to provide a basis for assessing impact on, for example, agricultural water resources and national economies.

85. Climate system monitoring looks at the deviation of the world climate from the expected norm—where is it too hot, too cold, too wet, too dry, and so on. WMO issues a monthly bulletin which has become required reading in some countries where knowledge of rainfall changes is essential. Panama is an example: the efficient running of the Panama Canal lock system depends upon careful husbandry of rainfall water resources. The same GEMS programme issues an annual summary of climate events over the previous year. The first of these has been adopted as a teaching text in a number of North American colleges and universities.

86. Is sulphur in the atmosphere decreasing? An analysis of data from the WMO/UNEP Background Air Pollution Monitoring Network (BAPMoN) suggests the answer is yes. Recent analyses show that between 1975 and 1981 a decrease of 30 per cent in the volume of sulphur in precipitation was apparent globally, that is, from the data supplied by the 70-odd BAPMoN stations which faithfully reported data for at least four out of the seven years. Within regions the pictures show more variability. This underlines the value of globally standardized observations, the general utility of which will be judged in the global assessment of BAPMoN which will be completed towards the end of 1987.

87. The knowledge of background levels of pollution provided by BAPMoN continues to be the standard for detecting global trends such as carbon dioxide increase on the one hand, and developing national pollution control policy guidelines on the other. For example, the contribution of BAPMoN to the ECE-UNEP effort to monitor long-range transboundary air pollution, together with the work of the European Monitoring and Evaluation Programme made possible a protocol on sulphur emission reduction under the Convention on Long-range Transboundary Air Pollution, adopted by the member States of ECE in 1979.

88. The World Glacier Inventory was completed in 1985 and will be published in 1987 with support from UNEP. It forms a milestone as a baseline for monitoring the global effects of atmospheric warming, which will become a major environmental concern over the next few decades.

Health-related monitoring

89. Although the GEMS health-related monitoring networks are global, they have measurable impact on expanding and strengthening national monitoring programmes, particularly in developing countries. During the past year, for example, GEMS urban air monitoring procedures have been used to expand networks in China, India and Malaysia. China, in addition, was the first country to make use of the format which was developed for the utilization of GEMS air data at national levels. An expert mission from Hong Kong to China and the establishment of a WHO regional collaborating centre in Sao Paulo, Brazil, are two more examples of co-operation among developing countries in this field.

90. The water component of health-related monitoring has had a catalytic effect in the creation of national networks, such as those of India and Peru, and in the continuing

expansion of the network into the developing world with the addition of monitoring stations in the Niger, Senegal and Zaire. In Brazil, GEMS analytical quality control procedures are being applied to intercalibration among national laboratories. Of course, international quality control continues, with 250 laboratories throughout the world participating. A regional network of scientific reference institutes has been established in Latin America for assessing toxic substances in surface and ground waters.

91. The GEMS project has contributed directly to the control of food contamination in a number of countries, including Brazil, China, India and Qatar. Moreover, the Qatar Regional Centre for Food Contamination Monitoring provides expertise and assistance to Qatar's neighbours and others: another example of technical co-operation among developing countries. The food contamination monitoring network has expanded to cover 19 developing countries. The volume of dietary intake data being collected by the project tripled during 1986.

92. For urban air quality, WHO is collaborating with the Monitoring and Assessment Research Centre (MARC) to include pollutants and data from sources outside the current network. The GEMS water assessment has enlisted 12 eminent experts to prepare background material. Special linkages have been established with GESAMP (the UN Joint Group of Experts on the Scientific Aspects of Marine Pollution), the SCOPE-UNEP Carbon Unit studying the global biogeochemical carbon cycle, and the International Association on Water Pollution Research. The data for the food contamination assessment have been compiled and will include a historical analysis of the 1980-1983 data which were published in 1986.

93. Man can be assailed by environmental pollutants via many routes: through air, water, food, in any combination. Assessment of the total exposure and consequent threat to human health from a particular substance, or from the whole spectrum of noxious substances in any one place, requires an integrated approach. This is the idea behind the Human Exposure Assessment Locations (HEALs) programme currently being pursued within GEMS by WHO. The number of participating countries has now risen to seven, four developing and three developed. The latter three are providing the core project infrastructure in the form of three technical co-ordinating centres. During 1986, two major HEALs monitoring studies began, one on DDT/hexachlorobenzene and one on heavy metals.

Monitoring of the long-range transport of pollutants

94. A second phase of long-range transboundary air pollution monitoring is concentrating on damage to forests in the ECE region by applying the methodology developed in the first phase. A draft manual on methodologies and criteria for harmonized sampling, assessment, monitoring and analysis of the effects of air pollution on forests was published in 1986. Here is a concrete example of the outputs of one project being put to immediate and practical use in a follow-on activity.

95. Now recognized as one of the major environmental problems facing the region, the apparently sudden damage to and destruction of Europe's forest heritage has shocked the nations into rapid action. Although the exact mechanisms of forest damage are far from clear, there is agreement among the majority of scientists that it is in some way associated with the build-up of atmospheric pollutants (mainly sulphur and nitrogen oxides). There is increasing evidence that it is not a sudden phenomenon but something that has been gradually building up since the beginning of the industrial revolution, and has only recently reached the readily observable extent that has caused such alarm. UNEP together with ECE is therefore undertaking a study of the extent and degree of this damage in the European

region by assisting in the establishment of two centres, in Czechoslovakia and in the Federal Republic of Germany, that will co-ordinate national monitoring activities and analyse incoming data.

Integrated monitoring

96. Integrated monitoring is so called because it looks simultaneously at pollutants and ecosystems. The current GEMS integrated monitoring project in twin temperate broad-leaved Biosphere Reserves in Chile and the United States began modestly by examining the behaviour of a relatively small number of environmental chemicals in a relatively small number of ecosystem sinks and pathways. The results—in terms of the general methodology developed as well as the particular study areas themselves—are promising. We are beginning to understand how to combine the monitoring of pollution with the monitoring of natural ecosystems. The project, which is studying background levels of pollution in relatively undisturbed forest ecosystems, will provide data-gathering and analytical tools and procedures for expanding the effort to other ecosystems which are typically threatened with higher levels of pollution. The same approach is now being used in the USSR and its neighbours, and UNEP is discussing how these two activities can be linked as the nucleus of a new global network.

97. Integrated monitoring is even more difficult in the oceans than in terrestrial ecosystems. There is nevertheless a strong feeling that the two should be related, and that integrated ocean monitoring should be carried out when possible near terrestrial integrated monitoring stations and perhaps BAPMoN baseline stations.

Ocean monitoring

98. 1986 was a year of increasing operational interlinkages between GEMS and the Oceans and Coastal Areas Programme Activity Centre. The Centre has traditionally co-ordinated ocean monitoring on behalf of GEMS. Now, concerted efforts, particularly in the context of GRID (see below), are being focused on ocean monitoring data quality and comparability. As with the bulk of the Centre's activities, marine data are approached in a regional context: two specific joint initiatives, one in the Mediterranean and one in the South Pacific region, have been undertaken.

The Global Resource Information Data Base (GRID)

99. What good is a soils map? What use can be made of data on wind speed over the Sahel? What does one do with point samples of pollution in the Mediterranean? A pedologist, a geomorphologist or a marine chemist would undoubtedly be able to give good, technical answers. But a decision maker, faced with erosion or dead fish, would throw up his hands in despair.

100. GRID, the Global Resource Information Database, is designed to help such decision makers. GRID has been established within the framework of GEMS with more than \$2 million of in-kind contributions from government and private donors in the form of hardware, software, seconded personnel, facilities and maintenance. In compliance with Governing Council decision 13/1, II.2. para. 5, UNEP is pleased to report that GRID has progressed better than anticipated during the first two years of a two and a half year pilot phase. A multi-level evaluation—both internal and external—at the end of 1987 will examine the degree of success of the GRID initiative, determine the level of practical effects and impacts on decision-making, and make recommendations for the next steps. GRID is

concerned with turning environmental data into useful information. Using the computer-based technology of its Geographical Information System, GRID aims to integrate resource data in meaningful ways for particular problems in particular places. Soil erosion, for example, is influenced by soil type, topography, rainfall and wind run, vegetation cover and land use pattern. Fish die, among other reasons, because of their presence in certain places at certain times, which is dictated by things like salinity and the distribution of their food, and there they run into concentrations of pollution from various discharge sources which has moved by water circulation, determined in turn by the shape of the bottom, wind and temperature patterns. GRID technology allows us to approach such complexities by combining the relevant environmental data sets, initially to describe, but eventually to understand, and ultimately to predict and manage.

101. During the second of the first two years of the pilot phase, Norway added its name to the list of contributors in kind to GRID (the others being various governmental and non-governmental organizations in Canada, Switzerland and the United States). The first GRID "node" became operational in Geneva in September 1985, and GRID Control started operating in Nairobi early in 1986. Both facilities have been active in the two-pronged tasks of data base and methodology development.

102. GRID strives to develop the methodology for obtaining and collating global data sets, and supplying those data sets to users. During 1986, nearly 20 global or regional data sets—ranging from political boundaries to vegetation—were compiled within GRID and supplied to a number of requesters largely for scientific purposes, for example, modelling ocean-atmosphere interactions, pinpointing likely global carbon sources and sinks, correlating the distribution of acid-forming elements with forest damage, etc.

103. GRID is also providing a practical introduction to Geographical Information System technology for application at the national level. A number of problem-oriented case-studies were discussed with national authorities in China, Costa Rica, Indonesia, Kenya, Panama, Peru, Saudi Arabia, Switzerland, Tunisia and Uganda. Most of the case-studies have produced concrete results, indicating where exactly are the best locations for coastal aquaculture sites, how environmental factors combine to constrain carrying capacity in a particular region, and what ancillary environmental changes are associated with deforestation.

104. National applications of GRID were combined with training under a UNEP/UNITAR GRID training programme sponsored by the Swiss Development Agency. In the first year's round of lectures at the Swiss Federal Polytechnic in Lausanne, and "hands-on" training at the GRID Processor in Geneva, 10 experts from as many developing countries used GRID to analyse a range of real environmental problems affecting their countries.

105. The notion of a distributed global data base, linked through telecommunications, was put to the test several times with resource data being transmitted through conventional telephone lines. However, data transmission rates were very low, and for cost-effective telecommunications between GRID nodes, direct satellite links will clearly have to be established.

106. Early indications are that the pilot phase will prove GRID's worth from the global down to the subnational level, and UNEP looks forward to the day when GRID data and technology will be routinely and easily available to the entire world community to help sharpen the process of environmental assessment and guide the forces of environmental management.

INFOTERRA (Budget subline 4104)

107. INFOTERRA is the world's largest environmental information system, linking national and international institutions and experts in a co-operative venture to improve the quality of environmental decision-making. In the 10 years since it became operational INFOTERRA has processed over 50,000 queries emanating from every region.

108. Although the network started life with the limited function of referring users to sources of environmental information, this was recognized as being only the first step on the path to the provision of substantive information. Since 1983 many partners of the network have extended their services and now either supply documents from their own resources, including other data bases, or apply to INFOTERRA-registered sources of information and request the needed information. Hence, in answer to the call to introduce decision makers at all levels to the information sources available in their own and other countries, the INFOTERRA partnership venture with 129 countries and 13 United Nations agencies is actively providing primary literature, processed data, published reports, bibliographies, national and international legislation and advice on more than 1,000 environmental topics.

109. During 1986, INFOTERRA continued its activities as the component of Earthwatch responsible for the exchange of scientific and technical environmental information. The main thrust of these activities was towards further strengthening of network operations through training and promotion, and improving user services—particularly through the provision of substantive information on a larger scale.

110. In 1986 the number of Government-designated INFOTERRA national focal points increased to 129 (of which 106 are in developing countries), serving over 98 per cent of the world's population. Of these, 79 are considered to have a moderate to high level of activity given the resources available to them. The less active remainder are in the developed as well as the less developed parts of the world. As many developing countries facing economic problems have demonstrated a considerable commitment to the exchange of environmental information by active participation in the network, this is not seen as the major reason for low participation. The INFOTERRA Programme Activity Centre has continued its attempts to reactivate a number of inactive focal points, with some success.

111. The principal emphasis during 1986 was placed on recruitment of Special Sectoral Sources, increasing the number of Regional Service Centres, promoting the use of the network and improvement of services. National seminars, which expose network services to local users and potential sources, have continued to generate a lot of interest.

112. User services were improved by the addition of six Special Sectoral Sources during 1986, each of which has the responsibility of providing bibliographical information and substantive documents on priority environmental issues. Each of these Sources is an internationally recognized centre of excellence in its subject area (for a list of the subjects covered, see table 1). Three more Regional Service Centres, in Chile, India and Morocco, were established during the year to improve the flow of substantive information at the regional or subregional level. Each combines the skills of an INFOTERRA national focal point with those of a documentation centre, and is equipped to provide substantive information on a broad spectrum of environmental issues.

Table 1
Subjects covered by Infoterra special sectoral sources

- Agriculture and environment
- Atmosphere and climate
- Energy (renewable resources)
- Environmental education and training
- Environmental legislation
- Environmental management and planning
- Environmental monitoring and assessment
- Human settlements (drinking-water, sanitation and supply)
- Soils and land use
- Technology and industry
- Toxic chemicals
- Transport and environment
- Waste treatment (including hazardous waste management)

113. In addition to the regular training course in INFOTERRA operations for newly appointed staff at national focal points, a revised *Operations Manual* in English, French and Spanish was distributed to all focal points which use those working languages. The Russian version is under preparation.

114. Continuing the policy of providing specialized reference tools to national focal points and outside subscribers, INFOTERRA published a multilingual specialized directory late in the year on *Wastes and Their Treatment*, a subject referred to in many of the queries received by the network.

115. Use of INFOTERRA continues to increase significantly i.e. 9,100 in 1984 to 12,100 in 1987 (see figures 9-11). Again, the majority of queries were from developing countries. An ever-increasing number of users accept INFOTERRA as an effective and efficient channel for information transfer. It is noteworthy that among the 5,500 registered INFOTERRA sources world-wide, just under 20 per cent come from industry (some 160 in developing countries and about 900 in developed countries).

116. The continuing trend towards the provision of substantive information is reflected in the latest figures, which show that users received substantive information in 70 per cent of all cases recorded (as opposed to 60 per cent in 1985). Most of the information (73 per cent) came from sources within their own countries. User satisfaction has been monitored as a built-in procedure, and over 90 per cent of those questioned reported that the information they had received was either good or excellent. Examples of subjects for which documents were supplied are: paper recycling (for a Pacific island nation), noise abatement (for a Gulf State), environmental impact of big dams (for an Asian country), sand dune fixation (for a North African State), desalinization of water using solar or wind energy (for a European nation), chronic impact of large-scale pesticide use (Central America), fencing methods to protect rice fields from hippopotamuses (a West African country), conversion of

Figure 9.
Domestic and foreign users and suppliers of information
INFOTERRA USAGE ANALYSIS 1985

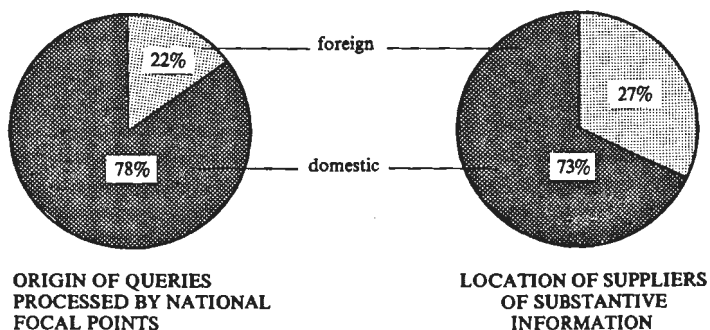
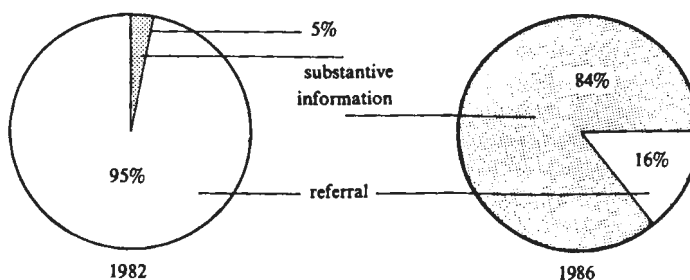
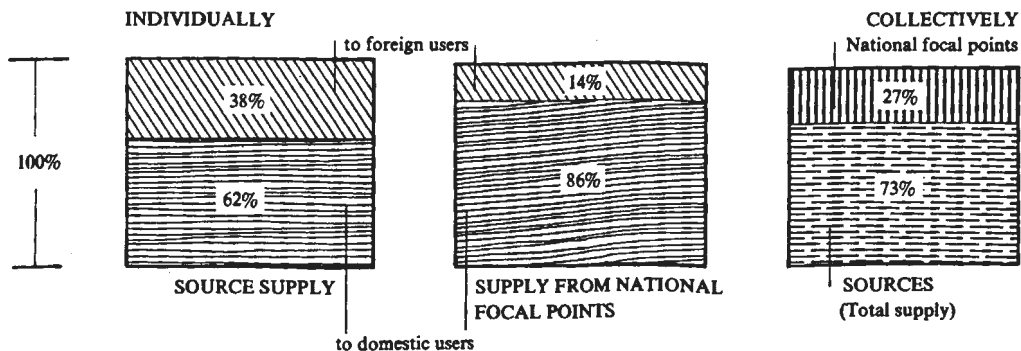


Figure 10.
Queries receiving substantive information and referral services from national focal points



Note: Substantive information delivery (shown shaded) refers only to that provided by national focal points; users received substantive information from sources as well.

Figure 11.
Proportion of substantive information delivery between sources and national focal points



agricultural crop waste into natural fertilizer (Latin America) and the effect of soil pollution on crops (a North American country).

117. Emphasis was given during 1986 to the wider adoption and utilization of the INFOTERRA data base and software. To this effect, the computer programme and data base were converted for use on a micro-computer, with assistance from UNESCO, and the INFOTERRA national focal point in Japan, under a grant from the Government of Japan, started work on development of the on-line mode of the programme.

118. The INFOTERRA network has demonstrated a significant multiplier effect during recent years. Most of the national focal points in developed countries, and some of those in developing countries, have direct access to major environmental data bases within the country, and have made the data available to users in remote areas of developing countries through the networking process. What was hitherto not available to independent users in developing countries is now accessible, usually free of charge. In addition, new dialogues have been initiated among researchers and environmental workers. As a result of putting an inquiry to INFOTERRA many of them have been able to widen their circle of colleagues working on similar projects, pool their resources and share more information.

Assessment (Budget subline 4103)

119. Activities under this subline may be divided into three areas: monitoring and assessment, biogeochemical cycles, and photosynthesis and bioproductivity.

Monitoring and assessment

120. The Monitoring and Assessment Research Centre (MARC) has continued to serve as an important focus for environmental pollution assessment, helping to bridge the gap between monitored data and assessments of impacts on human populations. In 1986 epidemiological studies were begun in the Seychelles; a study on the impact on pregnant women of cadmium exposure at places of work was begun; and results of research on toxic effects of heavy metals on foetal brain development has showed some disturbing results, reminiscent of Minamata disease. The visiting scientist programme, which serves not only as a forum for research but also as a training ground for national scientists, hosted five scientists from China, two from the United States and two from Yugoslavia. A training workshop on environmental monitoring, emphasizing tropical urban problems, was conducted by MARC at the National University of Malaysia, Kuala Lumpur. This workshop was intended particularly for those from the governments and agencies of the various states within the Malaysian Federation, thus encompassing an important level of officials and technicians not normally reached by such workshops. MARC also made a considerable contribution to the preparation of the UNEP *Environmental Data Report*. This report, compiled at MARC, is a comprehensive collection of data summaries and sources, highlighting environmental conditions and trends throughout the world. It will serve as a major reference document for assessments and state-of-the-environment reporting. The report is to be issued in 1987 in time for the fourteenth session of the Governing Council. Evaluation of GEMS health-related monitoring data has also been undertaken at MARC. An extensive questionnaire survey of air pollution data and problems in both developed and developing countries was conducted for information to be included in a global assessment report by WHO and MARC for GEMS. A brochure 'Pollution and Health', describing the GEMS health-related monitoring projects was published and 6,000 copies have been widely distributed. A major survey of biological monitoring by use of plants has been issued in the

MARC technical report series. The report is a critical review of pollution monitoring techniques and the methods can be readily applied in all countries for comparative monitoring. A subsequent volume on biological monitoring using animals is in preparation.

121. The IUCN Conservation Monitoring Centre is continuing to build a comprehensive global data base of endangered plant and animal species, including a comprehensive and unique data base on cetaceans (whales, dolphins and porpoises), and to supply users with a range of important conservation information. Staff of the Centre paid several visits to the GRID Processor in Geneva to work on referencing of key plant and animal species vis-a-vis vegetation zones, parks and protected areas, etc. It is envisaged that eventually the Centre's data base will cover all species, not just endangered ones, and will become a principal scientific baseline for assessing declining biological diversity and the erosion of genetic resources.

122. Another project has provided an overview of a group of animals whose problems are the opposite of those facing whales: cervid (deer, elk, moose and reindeer) populations are exploding throughout their range. The outputs include: a report reviewing the range and status of cervid populations; estimates of growth, fecundity and antler development for each species from specific sites in each country; an assessment of past trends in the size and condition of cervid populations, and a prediction of likely trends in future; and a system for routine monitoring and assessment of the status and trends of palaeartic cervids, compatible with the Centre's species data base and the GRID data base. The package is contributing to the rational management of cervids, which make up the greatest non-domestic terrestrial animal biomass in the northern hemisphere.

Biogeochemical cycles

123. The Earth's biogeochemical cycles are essential to the maintenance of the biosphere. The continual transfer of chemical elements between biotic and abiotic components of the biosphere distinguishes the Earth from other planets and justifies use of the term biogeochemical element cycling. The Earth's element cycles involve major reservoirs, including the atmosphere, oceans, and terrestrial and aquatic ecosystems, that are coupled by physical, chemical and biological processes. Earth's climate is strongly influenced by the physical, chemical and biological composition of these reservoirs, and climate in turn influences element cycling in the biosphere.

124. The sulphur cycle is only one of several biogeochemical cycles that exert an impact on climate. A number of issues are currently being discussed which directly relate to the sulphur cycle, such as acid precipitation and acidification of inland lakes. All these issues have become prominent because the speed of transformations within the sulphur cycle has increased dramatically as a result of man-made perturbations. Under a newly approved joint UNEP/SCOPE project, the International Sulphur Unit in Pushchino, USSR, which was established as a result of two joint SCOPE/UNEP activities, is to focus on the sulphur cycle in aquatic ecosystems and its interaction with other biogeochemical cycles.

Photosynthesis and bioproductivity

125. In 1986 work continued on the joint UNEP/Kings College, London project on primary productivity and photosynthesis in natural ecosystems of the tropics, described in the 1985 Annual Report. The five regional centres are collecting data on photosynthesis productivity both above and below ground using standardized techniques and equipment. Data have now been collected for nearly two years—nearly three years in the case of the first three centres.

126. The data obtained from these grassland sites so far show that previously accepted methodologies give serious underestimates of bioproductivity. For example, bioproductivity at the Kenya study site is approximately three times the value that would be calculated using traditional techniques; for the Mexico site it is five times higher, and for the Thailand site eight times higher. Productivity of emergent grasses at the Brazilian study site, and the rate of carbon assimilation in Kenya and Thailand, approach the highest values recorded for crops. These data suggest that the effect of the replacement of natural grassland by crops or grazing land may have to be carefully assessed. There may also be implications for the effects of the destruction of natural ecosystems (besides forests) on carbon cycling, and for the effects of increased levels of CO₂ in the atmosphere on the productivity of such tropical ecosystems.

127. Following the seventh training course on bioproductivity assessment mentioned in the *1985 Annual Report*, the Shanghai Institute of Plant Physiology decided to run its own course on bioproductivity and photosynthesis, which was held in August 1986. The course manual has been translated into Chinese and is being published in China.

Outer limits (Budget subline 4102)

128. Outer limits are those beyond which an ecosystem subject to exploitation by man suffers irreversible damage. To date UNEP has restricted its focus to atmospheric outer limits—risks to the ozone layer and greenhouse-gas-induced climate change. Other activities such as the implementation of the World Climate Impact Studies Programme require a broader consideration of atmospheric processes than those implied by the “outer limits” concept. In accordance with recommendations made during the in-depth evaluation of UNEP’s work, outer limits activities have now been incorporated into the GEMS Programme Activity Centre.

129. A largely unexplained and deepening hole in the ozone layer over the Antarctic, and reports of unexpected ozone depletion in the northern hemisphere, have gripped the attention of a public which is already aware of a prospect of climatic change of unprecedented proportions. Such factors have added urgency to the very active and comprehensive UNEP programme on atmospheric matters described below.

Risks to the ozone layer

130. This area was the subject of intense activity during the year. The adoption of the Vienna Convention for the Protection of the Ozone Layer in March 1985 provided the impetus for efforts to strengthen international legislation to protect the ozone layer from unacceptable harm by securing agreement on the control of chlorofluorocarbons in the form of a protocol to the Convention. Recognizing that such an agreement must be based on sound scientific and technical information, UNEP embarked on a closely co-ordinated programme of legal and technical preparatory activities.

131. UNEP’s Co-ordinating Committee on the Ozone Layer held its eighth session at UNEP headquarters in February to make a new assessment of ozone layer modification. This assessment was based on, and confirmed the findings of, an earlier assessment undertaken by seven national and international bodies including UNEP (*1985 Annual Report*, chap. IV, para. 134), which outlined the current understanding of the processes controlling the present distribution of and change in atmospheric ozone. Both assessments reiterated that there was compelling evidence indicating increases in the concentrations of gases which control atmospheric ozone. Theoretical predictions of a changing atmosphere are now being confirmed by observations, and the changes carry implications for a wide

range of man's activities. The assessments provide a warning that mankind is conducting a global experiment on the atmosphere without the consequences being fully understood.

132. An assessment of the processes controlling the distribution of ozone is usually prepared at the same time as the assessment of the effects of ozone layer modification, but the former was delayed pending a major review of the effects of atmospheric change. This was done at a joint conference on the effects of changes in stratospheric ozone and global climate, organized by UNEP and the United States Environmental Protection Agency in June in Washington. At the conference, scientists from 20 countries discussed ultraviolet radiation flux and its likely effects on human health, plants, aquatic organisms and polymer degradation, and also the implications of the greenhouse effect for water resources, agriculture and forestry, and sea-level rise. The policy implications of such changes were also considered. The Co-ordinating Committee met again in November and was able to use the results of the conference to prepare a global assessment of the effects of ozone layer change.

133. Summaries of the two-part Committee assessment were made available to the Vienna Group which met in Geneva during December to work on the chlorofluorocarbon protocol (for further details, see budget subline 2105 above). The Committee also provided the Group with a non-technical outline of some of the important issues which it felt the Group needed to take account of in drawing up the protocol.

134. A report of a two-part Workshop on the Control of Chlorofluorocarbons was also submitted to the Vienna Group meeting. The Workshop, convened in response to Governing Council decision 13/18, was held in Rome in July and in Leesburg in the United States in September. The first part considered current and projected CFC production, production capacity, emissions, use, trade and current regulations, including the costs and effects of their application. The potential costs and effectiveness of existing and developing technological options for control were also considered sector by sector. The purpose of the second part of the Workshop was to use a comprehensive set of criteria to identify and analyse various regulatory strategies for CFCs, including the establishment of global emission limits and also the setting of production capacity caps calculated according to present production and use and subject to revision based on periodic research and assessment.

The greenhouse gas/climate issue

135. The joint UNEP/ICSU/WMO conference on the role of carbon dioxide and other greenhouse gases in climate variations and associated impacts was reported on in detail in the *1985 Annual Report* (chap. IV, paras. 138-140). In response to the recommendations of the conference, among them a call for increased public information efforts on the issues of greenhouse gases, climate change and sea-level, the report of the conference was widely circulated and the topic was selected for one of the first volumes of a GEMS Environment Library series which addresses vital environmental issues of the day in a way designed to inform the public and decision makers in clear, non-technical terms. Another volume will deal with the ozone layer issue.

136. The conference called on UNEP, WMO and ICSU to establish a small task force on greenhouse gases and, accordingly, a seven-member Advisory Group on Greenhouse Gases was set up and met for the first time in July. The Group reviewed research results obtained since the conference, and agreed that some of the results, such as the dramatic thinning of the ozone layer over the Antarctic, heighten the urgency of the concern expressed at the conference.

137. An overview of the potential global sea-level rise resulting from the greenhouse effect is in preparation. This document, which will be widely circulated, foreshadows a more detailed look at the socio-economic impact of sea-level rise on densely populated coastal and estuarine regions. Figure 12 illustrates the potential catastrophic impacts and shows the expected shoreline retreat in the Ganges delta which would occur as a consequence of a global rise in sea-level of 0.5 to 2.5 metres. Figure 13 shows the potential loss of wetlands that would be associated with a sea-level rise of a rapidity beyond the ability of the marsh to keep pace.

138. Concern felt by Pacific island States over possible inundation by sea water has prompted the Oceans and Coastal Areas Programme Activity Centre to set up a team to examine the implications of expected climate changes for the South Pacific. GEMS is to provide the team with scenarios of probable climate change. Similar investigations will be undertaken in both the Mediterranean and Caribbean regions.

139. The above and other activities under the World Climate Impact Studies Programme were discussed by the UNEP Scientific Advisory Committee at its fifth session, held in Warsaw in March. Some of the many activities recommended by the Committee are highlighted below.

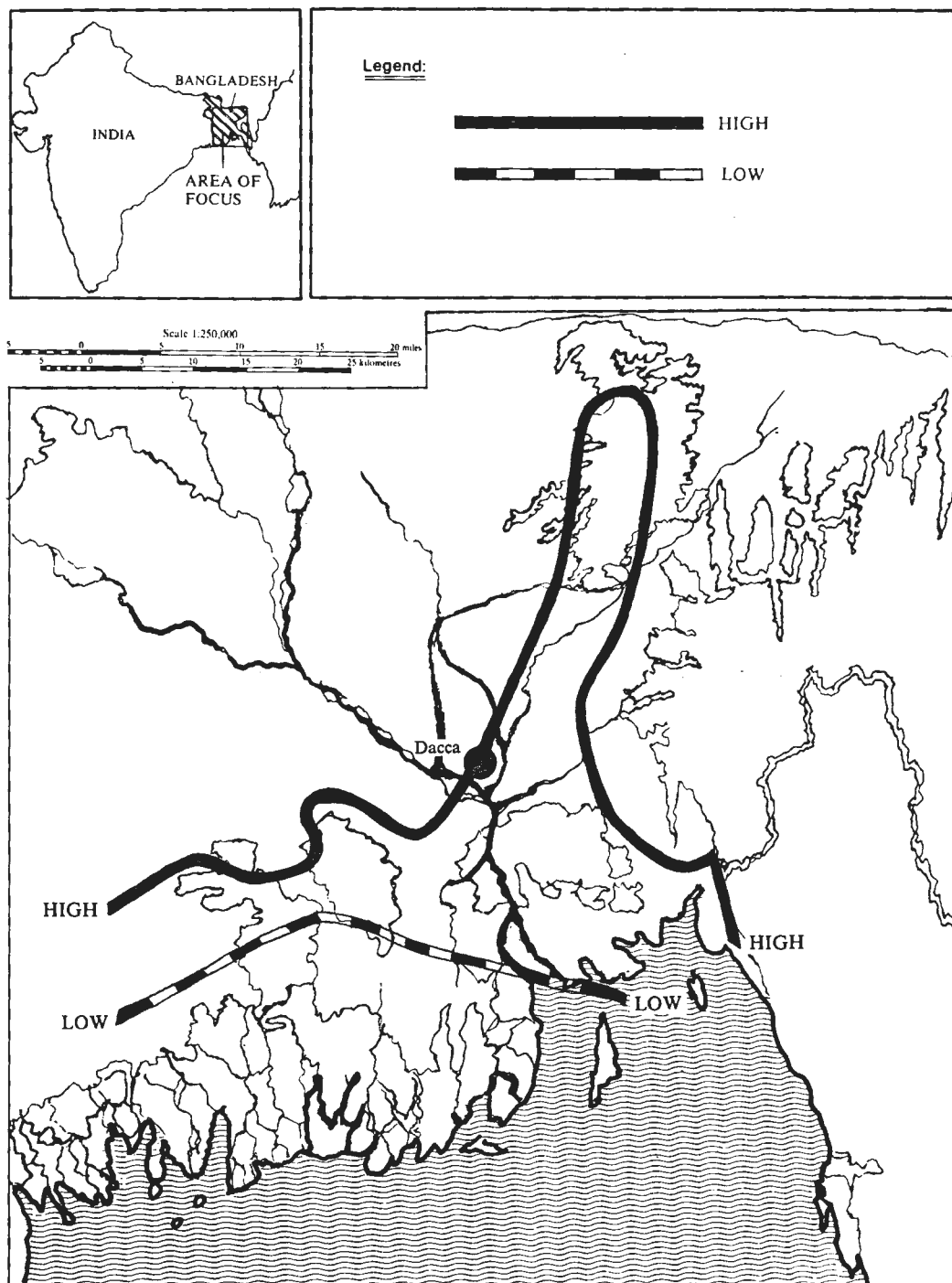
140. In accordance with the recommendations of the 1985 workshop on the El Niño phenomenon (*1985 Annual Report*, chap. IV, para. 144), an informal standing group of impact scientists representing more than 10 areas of the world vulnerable to El-Niño-induced climatic anomalies has been constituted. The group will exchange research results and will meet periodically to report climate anomalies and further understanding of the impacts of atmospheric teleconnections. Figure 14 shows the world-wide occurrence of droughts which may have been influenced by the severe El Niño event of 1982-1983.

141. In another follow-up to the recommendations of the UNEP/ICSU/WMO conference, UNEP, WMO, IIASA and other organizations sponsored a task force meeting on policy-oriented assessments of the impact of climate variations in Laxenburg, Austria in July. The participants made specific recommendations regarding future research in the areas of climate scenario development, agriculture, water resources, fisheries, forestry and tropical biomes. Special emphasis was given to the need to integrate sectoral studies at the regional level and to examine interactions between climate-induced impacts and other pressing policy problems such as international migration, resource depletion, and economic development in the tropics.

142. With WMO and WHO UNEP sponsored an International Symposium on Climate and Health, held with the support of the Soviet Government in Leningrad in September. Twenty-eight countries were represented at the symposium, which considered the various aspects of the application of climatology to human health and the assessment of the impact of climate on health. Sixty-six scientific reports were presented and recommendations were made for research, assessment, information exchange and publication of state-of-the-art reports on topics including the use of heat balance models for assessment of the impact of temperature conditions on the human body; epidemiological studies of climate and diseases in different parts of the world; and the implications of climate change for populations in different regions, including human adaptability to climate change. UNEP is studying these recommendations carefully with a view to future action.

143. The latest series of UNEP-supported training courses in agrometeorology, organized by the USSR State Committee on Hydrometeorology, took place in Alma-Ata, USSR in October. At these courses agrometeorologists and agronomists from developing countries study agrometeorological forecasting, agroclimatic resources, the impact of climate variability on agricultural production and the struggle against desertification.

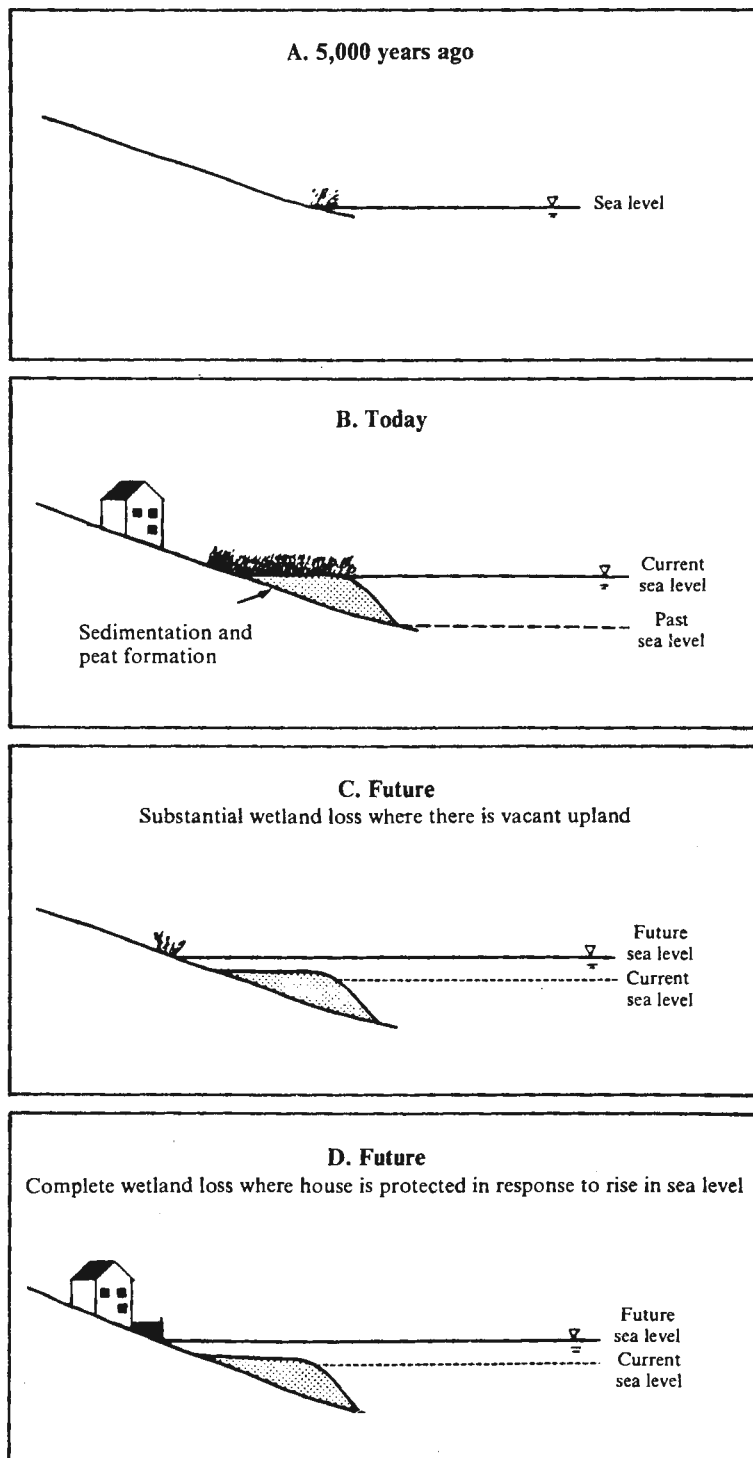
Figure 12.
Potential impact of sea-level rise on the Ganges delta



The high scenario represents the shoreline retreat from a 2 to 2.5-metre global rise in sea level if dams built on the Ganges prevent sediment from reaching the delta. The low scenario represents the impact of a 50-centimetre global rise with only a partial disruption of the sedimentation process.

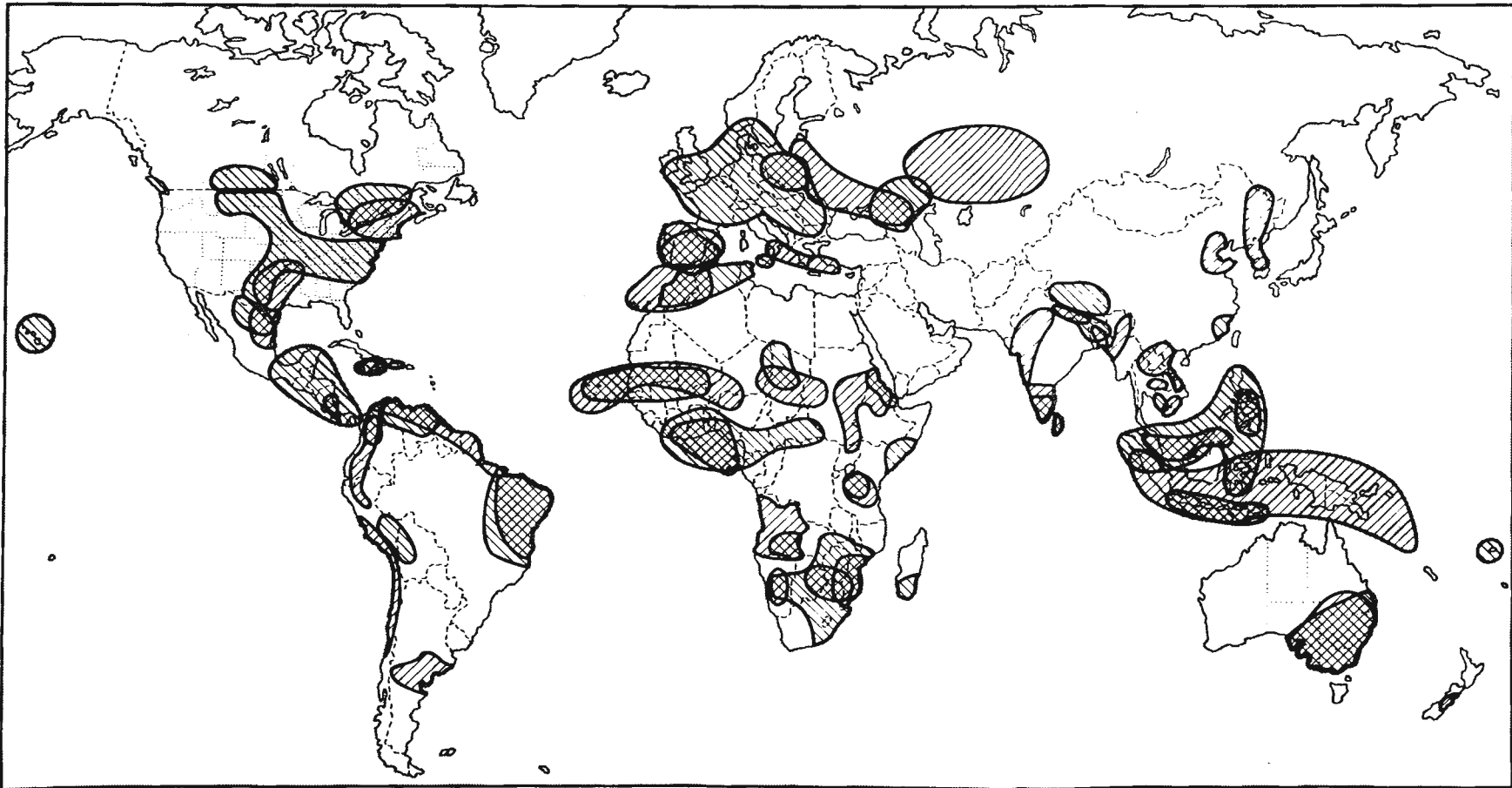
Source: James G. Titus, ed., *Effects of changes in Stratospheric Ozone and Global Climate*, vol. 1 (Washington, United States Environmental Protection Agency/UNEP, 1986).

Figure 13.
Evolution of marsh as sea level rises



Source: James G. Titus, ed., *Effects of Changes in Stratospheric Ozone and Global Climate, Vol. I* (Washington, United States Environmental Protection Agency UNEP, 1986).

Figure 14.
Climate impacts map droughts



Source: Michael Glantz, Richard Katz and Maria Krenz, eds., *The Societal Impacts Associated with the 1982-83 Worldwide Climate Anomalies* (Boulder, Colorado, National Center for Atmospheric Research, 1987).

OCEANS (Budget line 51)

144. This budget line is divided into three sublines: (a) Global marine environment; (b) Regional seas; and (c) Living marine resources.

Global marine environment (Budget subline 5101)

145. Through the Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP), UNEP continued its work on the scientific justification for an integrated global ocean monitoring programme, which will be the first attempt to interconnect marine biology, geology, chemistry and physical oceanography on a global scale.

146. Under the overall co-ordination of UNEP and with the support of all sponsors of GESAMP, work continued on the preparation of a second review of the health of the oceans. Drafts of 13 regional reports should be ready for review in early 1987.

Regional seas (Budget subline 5102)

147. *Mediterranean.* The Mediterranean programme continued to develop during 1986. Thirteen States signed monitoring agreements or provided data, and 102 laboratories participated in a total of 150 joint research projects. Equipment, fellowships and attendance at meetings were financed for laboratories and scientists, especially from developing coastal States.

148. The Centre for Specially Protected Areas began operating in Tunis, with technical support from IUCN. The centre in Split developed a regional co-operative programme for earthquake-prone coastal zones that was approved by representatives of 11 States affected by earthquake risks, and was submitted to UNDP for financing. Pollution risks associated with offshore operations in the Mediterranean area were identified through a technical meeting in preparation for a new protocol on offshore operations. The centre in Malta provided three courses on combating oil pollution, and the Blue Plan continued its pioneering work on scenarios for the Mediterranean basin for the year 2025. In total, 37 meetings, seminars, workshops and training courses were organized in 1986. The ministerial-level bureau kept the programme under regular review and met twice. Voluntary contributions to the Mediterranean trust fund totalled \$2,250,000, ensuring full liquidity for the programme.

149. *Kuwait Action Plan region.* The fifth meeting of the Council of the Regional Organization for the Protection of the Marine Environment (ROPME) was held in Kuwait in October 1986. The Council approved UNEP proposals for assistance to ROPME in reviewing projects and programmes, studying the causes of recent fish and dolphin mortalities in the region, and establishing a central data bank. UNEP also initiated, in co-operation with IOC, the preparation of a regional review on the state of the marine environment in the region, and continues to co-ordinate the provision of assistance from IAEA to ROPME projects, as well as providing *ad hoc* advice on technical matters.

150. *Wider Caribbean.* Seven Governments have ratified or acceded to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and its Protocol Concerning Co-operation in Combating Oil Spills. Two more have ratified the Convention only. The Convention and Protocol will enter into force 30 days after the date of deposit of the ninth instrument of ratification. Projects approved by the Third Intergovernmental Meeting in Cancún, Mexico in April are being implemented and

will be evaluated at the next meeting, which is planned for October 1987. The Executive Director successfully completed negotiations with the Government of Jamaica for the establishment of the Regional Co-ordinating Unit for the Action Plan in Kingston. The offices were opened on 1 September 1986, and formal inauguration is planned for May 1987.

151. *West and Central African region.* UNEP entered into negotiations with the Government of Côte d'Ivoire on a headquarters agreement for a Regional Co-ordination Unit to be established in Abidjan subject to the availability of funds.

152. *Eastern African region.* The only major activity in this region in 1986 was a multidisciplinary mission to Somalia in June to assist the Government in the development of a national action plan for the protection, management and development of the marine and coastal environment. A consolidated report and seven sectoral reports will be printed in the Regional Seas Reports and Studies Series in due course.

153. *East Asian Seas region.* Implementation of six projects continued during 1986. A meeting of experts on the East Asian Seas Action Plan was convened in Bangkok in December to evaluate achievements since 1977. The experts made a number of recommendations to improve the implementation of the Action Plan, and agreed to the formation of an association of scientists to review projects and act as a scientific advisory body to the Co-ordinating Body on the Seas of East Asia.

154. *Red Sea and Gulf of Aden.* UNEP held consultations with the secretariat of the Programme for the Environment of the Red Sea and Gulf of Aden in Jiddah concerning the initiation of joint activities related to monitoring of the marine environment and to coastal area development in the region. Projects dealing with contingency planning for pollution emergencies and marine pollution monitoring continued. Under the latter project a network of 18 institutes or laboratories was established.

155. *South Pacific region.* The Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, was adopted on 25 November 1986 in Noumea, New Caledonia, by 12 South Pacific island States—Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Samoa, Tonga, Tuvalu and Vanuatu—plus Australia, France, New Zealand and the United States. Two protocols to the Convention, on co-operation in combating pollution emergencies and the prevention of pollution by dumping, were also adopted.

156. Of the 16 countries, 7—Cook Islands, France, Marshall Islands, New Zealand, Palau, Samoa and the United States—went on to sign the Convention and its two protocols.

157. The Convention area covers the sea in the 200-nautical-mile zone around each South Pacific island and off the east coasts of Australia, New Zealand and Papua New Guinea, and those areas of the high seas which are enclosed on all sides by this zone. It stretches from Palau in the north-west to the Marshall Islands in the north, Kiribati in the north-east, Australia in the south-west and New Zealand in the south-east.

158. The Convention commits signatories to preventing, reducing and controlling pollution in the Convention area from vessels, land-based sources, sea-bed activities, discharges into the atmosphere, dumping from vessels, aircraft or man-made structures at sea, or the storage of toxic and hazardous wastes. In particular the Parties agree to prohibit the dumping and storage of radioactive wastes or other radioactive matter in the Convention area, and to prevent, reduce and control pollution which might result from the testing of nuclear devices.

159. Environmental damage, particularly coastal erosion caused by coastal engineering, mining, land removal, land reclamation and dredging, is also to be controlled. Rare or fragile ecosystems and depleted, threatened or endangered flora and fauna and their habitats are to be protected and preserved. Each Party is to develop contingency plans for coping with pollution emergencies and will immediately notify other countries likely to be affected should emergencies arise. The Parties also commit themselves to assessing the potential effects of development projects on the marine environment, so that measures can be taken to contain them.

160. *South-east Pacific.* Implementation of the Action Plan for the Protection of the Marine Environment and Coastal Areas of the South-east Pacific continued, with the Permanent Commission for the South Pacific (CPPS) as the implementing organization. Emphasis was placed on the monitoring of marine pollution, in close co-operation with national institutions, training of marine scientists and the development of case-studies on environmental impact assessment.

161. *South Asian Seas region.* A meeting of experts on the South Asian Seas regional programme was convened in Bangkok in December and revised a draft action plan and a draft overview on the environmental problems of the region. The experts recommended that UNEP should convene a meeting of legal and technical experts in mid-1987 to examine appropriate legal arrangements. They also identified six priority projects for implementation by UNEP subject to the availability of funds.

162. *South-west Atlantic.* In accordance with the wishes of the Governments of the region, no activities were conducted in 1986.

Living marine resources (Budget subline 5103)

163. In 1986 emphasis was placed on promoting the implementation of the Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals. Activities were concentrated on training of marine mammal scientists in developing countries, collection and distribution of information on ongoing marine mammal activities and co-ordination of national and international activities. A catalogue of public awareness materials available world-wide, such as video tapes, audio tapes, posters, booklets, T-shirts, etc., is in preparation and will be distributed at the fourteenth session of the Governing Council.

WATER (Budget line 52)

164. The traditional approach to water resources management has almost exclusively dealt with their function as natural resources, with insufficient emphasis given to them as a major component of ecosystems or landscapes (figure 15). The methodology of water resources development has mainly been based on individual projects in part of a water system.

165. As socio-economic development gathers pace in various parts of the world, the traditional approach has been found inadequate to manage water resources in an increasingly complex context and promote sustainable development of river basins. A new, comprehensive approach is hence required. It must deal with the various functions of water resources on equal terms, and within the framework of the integrated water system as a whole. This strategy is of great importance in the management of international water

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Living marine resources (Budget subline 5103)

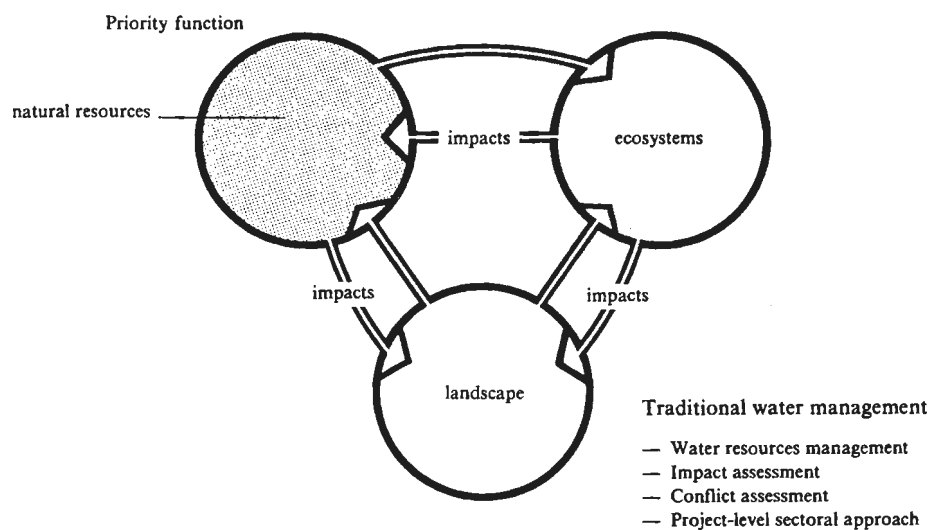
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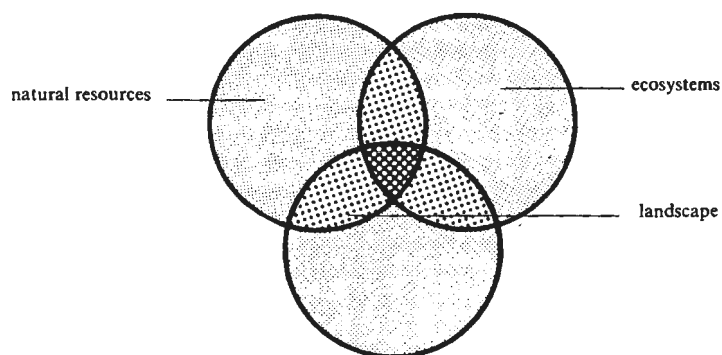
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Figure 15.
Traditional versus environmentally sound water management



Environmentally sound water management

- Integrated water management
- Impact management
- Conflict management
- Project and river basin level
- Integrated approach



Priority for the system as a whole

systems, where serious conflicts may arise between different interest groups. The most important aim of UNEP's new programme for the environmentally sound management of inland waters (EMINWA) is to introduce this integrated approach to the management and development of freshwater resources on a river or lake basin-wide scale. The main aims of the programme are:

- (a) To assist Governments to develop, approve and implement environmentally sound water management programmes included in action plans in inland water systems and use these systems for demonstration purposes;
- (b) To provide training for experts to enable them to implement such action plans, including drinking water supply and sanitation programmes, and to establish a training network in the developing countries;
- (c) To prepare a manual of principles and guidelines for the environmentally sound management of inland water systems;
- (d) To make regular world-wide assessments of the state of the environment in inland water systems;
- (e) To inform the mass media of the achievements and activities of the programme and to increase public awareness of environmentally sound water development.

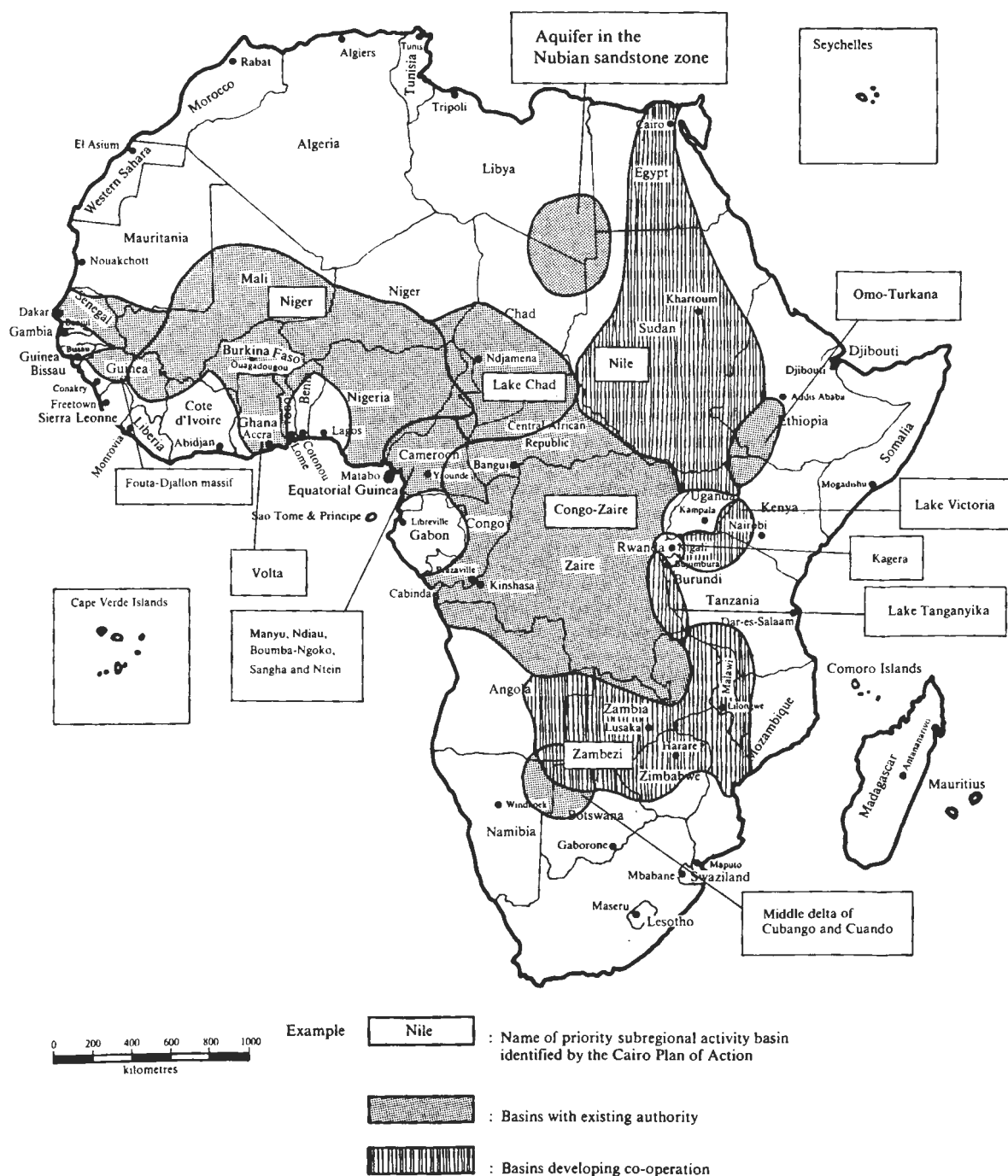
166. The environmentally sound management of an inland water system would involve the preparation of a draft action plan by the Governments concerned, followed by its adoption, implementation, review and evaluation, with assistance from UNEP and interested specialized agencies, donor organizations and NGOs where appropriate.

167. Preparation of an action plan for the environmental management of the Zambezi River system began in 1985. In March 1986, the Working Group of Experts on the Zambezi River system held its second meeting in Lusaka to discuss and revise the first draft of a diagnostic study on the present state of ecology and environmental management in the Zambezi River system, as well as the Zambezi action plan itself. It was expected that a draft intergovernmental agreement relating to the action plan would be finalized at the next meeting of the Working Group in January 1987 and approved by the Governments at meeting in April-May 1987. A map of Africa indicating the Zambezi and other river and lake basins identified by the First African Ministerial Conference on the Environment as priority areas for co-operation appears in figure 16.

168. In February 1986, as a follow-up to the conference on the conservation and management of lake environments held in Otsu, Japan, in 1984 (*1984 Annual Report*, chap. IV, para. 150), the International Lake Environment Committee (ILEC) was inaugurated with the objective of promoting sustainable development of lake basins and the environmentally sound management of lakes. In August 1986 the Secretary-General of ILEC visited UNEP and the main avenues of co-operation between UNEP and ILEC between 1987 and 1989 were identified. ILEC will contribute to the implementation of the Zambezi action plan and the EMINWA programme as a whole, especially its training component. In November 1986 ILEC and UNCRD organized a two-week training workshop on environmental planning and management in Japan (see under subline 2102 above).

169. To promote the integration of environmentally sound management principles in the joint use and quality control of surface and ground-water resources, UNEP supported two symposia organized in connection with the Scientific Assembly of the International Association of Hydrological Sciences (IAHS), held in Budapest in July 1986. UNEP

Figure 16.
River and lake basins in Africa
 Sub-regional co-operation in inland water systems of Africa



supported attendance by 13 professionals from developing countries, including some Zambezi countries; an evaluation of the use they made of the enhanced knowledge commenced in November, and the results were due to be available in early 1987.

170. Under the training component of the EMINWA programme, UNEP supported two training courses organized by the International Training Centre for Water Resources Management (CEFIGRE). In October 1986, a two-week course on environmentally sound water resources management, to assist the basin countries in the preparation and implementation Centre for Water Resource of the Zambezi, Lake Tanganyika and Lake Victoria action plans, was held in Harare with 12 participants from four Zambezi basin countries and three others. In October, to support the implementation of the International Drinking Water Supply and Sanitation Decade, a three-week training course on technical and socio-economic aspects of rural community water supply and sanitation was held for French-speaking African professionals in Sophia Antipolis, France, and Lome, Togo. Evaluation of these training courses commenced in December, and results will be available in early 1987.

171. In addition to organizing direct training courses, UNEP initiated a project to integrate environmental aspects in water resources engineering education, in co-operation with UNESCO. Six UNESCO-sponsored water management and hydrological courses organized in Argentina, China, Hungary, India, Ireland and Switzerland have been selected for this purpose. A meeting of experts from these courses held in April 1986 reviewed the present situation and prepared recommendations for the development of a 'model curriculum and syllabuses.

172. Under a joint UNEP/UNESCO project on integrated environmental evaluation of water resources development, a meeting was held in Paris in March 1986 to discuss a draft classification system and methodological guidelines on integrated environmental evaluation of water resources development. The draft will be finalized in mid-1987 and offer a simple means of evaluating the existing status of water projects and inland water systems from the point of view of environmentally sound management and selecting the best development options (see figure 17).

173. In October an International Symposium on the Impact of Large Water Projects on the Environment, organized by UNESCO and supported by UNEP, IAHS and IIASA, was held in Paris. UNEP supported the participation of 15 professionals from various developing countries, including those in the Zambezi basin. The Symposium concluded that the environmentally sound management of water resources projects should be implemented by means of an active, applied interdisciplinary and intersectoral learning process, and that representatives of various interest groups (socio-economic, ecological, technical, legal, local, regional and national) should be integrated in the development and management of such projects.

174. A major UNEP activity concerned the lending of support to the International Drinking Water Supply and Sanitation Decade. A Decade-related training course has already been mentioned. Two other major projects commenced in 1984 in co-operation with WHO (*1985 Annual Report*, chap. IV, paras. 187-188) progressed satisfactorily. In the drinking water quality control project, development of three pilot sites in Indonesia, Peru and Zambia has been completed and drinking water quality control programmes have been developed. Technical support to local authorities has been provided. Training courses for local personnel were organized at the sites in Indonesia and Zambia. The further utilization of the Zambian pilot site will fall under the Zambezi action plan.

175. A Regional Workshop on Treatment and Reuse of Sewage Effluents for Irrigation was held in Amman in August 1986. It was organized by FAO and the Government of

Soils (Budget subline 6101)

177. Although global food production can meet the needs of the world's people, in many countries of the world, growth in agricultural production has not been commensurate with the growth of population. In others, agricultural production not only meets but exceeds national demand, but poor distribution channels make it difficult for agricultural produce to reach the areas where it is most needed. The resulting shortages of food and other agricultural products are expected to worsen in the next decade. As demand for food increases, greater and greater stress is put on the world's finite land area.

178. In developing the Plan of Action for the Implementation of the World Soils Policy through national soils policies, emphasis was placed on the identification of vulnerable areas, and on action-oriented programmes to meet the needs of developing countries in particular. Also highlighted were research, training, education, and bilateral, national, regional and international transfers of knowledge and experience. A strong government commitment to the sound use of land and soil resources is required, with appropriate legislative, educational and research inputs. It is important that soils policy should be fully integrated with policies for the use and conservation of other natural resources. Failure to integrate soils and other resource policies rationally may lead to disruption of the environmental equilibrium and hence to a deterioration in environmental quality.

179. Experience in the formulation of national soils policies in developing countries was reviewed at an international symposium which took place in Hamburg, Federal Republic of Germany in August 1986 in conjunction with the thirteenth congress of the International Society of Soil Science. More than 40 soil scientists from over 20 countries participated in this event, 20 of them, from developing countries, with UNEP support. The recommendations of the symposium will be published as a separate volume of the proceedings of the congress.

180. In co-operation with the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) in India, UNEP published guidelines on farming systems principles for improved food production and the control of soil degradation in the arid, semi-arid and humid tropics. Appropriate farming systems are geared towards the generation of an economically viable labour-intensive technology for improving, utilizing and conserving the productive potential of natural resources, while helping to raise the economic status and quality of life of the community.

181. As part of the project on land and soil management in mountain ecosystems jointly sponsored by the Government of Bulgaria, UNEP and the USSR Commission for UNEP (UNEP/COM), a seminar on the socio-economic implications of mountain development was held in October 1985 in Tbilisi, Georgia, USSR. It is hoped that the output of the seminar will contribute to the creation of national capabilities in the formulation of land and soil policies for fragile mountain ecosystems in the Hindu Kush-Himalayan region and in Central and Eastern Africa.

Tropical forests (Budget subline 6102)

182. The increasing global concern for the situation of tropical forest ecosystems has found expression in numerous national and international initiatives involving a wide variety of UN organizations and other international bodies including FAO, UNCTAD, UNDP, UNESCO, the World Bank, IUCN, IUFRO and WRI. As can be seen from table 2 and figure 18, however, deforestation in tropical areas continues apace.

Figure 18
Status of Tropical Forests

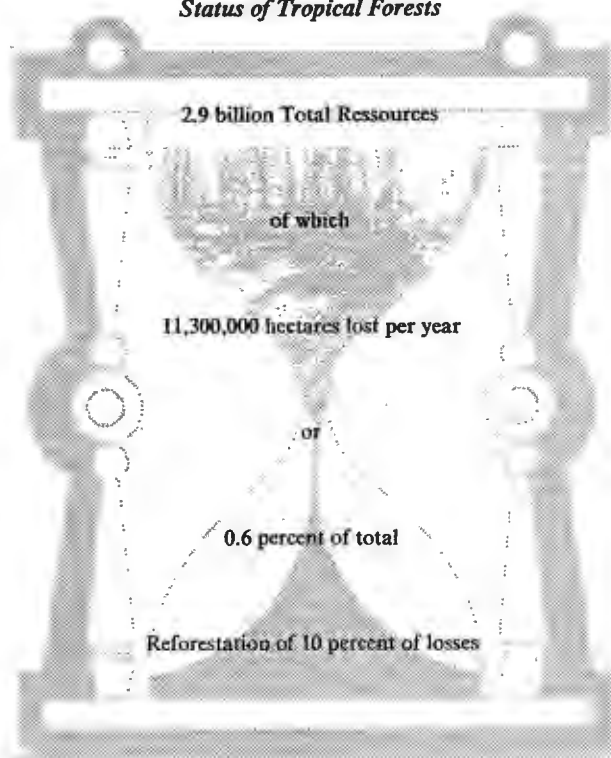


Table 2
Tropical forests in 1985 (Estimates)

	Americas	Africa	Asia
	Area in thousands of hectares		
Closed forest	657 072	208 970	296 379
Open forest	218 087	474 722	29 998
Total	875 159	683 692	326 377
Average rate of deforestation per year (per cent)	0.61	0.53	0.56
Total deforestation per year (thousands of hectares)	5 339	3 607	1 826

Source: Based on the Global Assessment of Tropical Forest Resources, GEMS PAC Information Series No.3 (Nairobi, UNEP, 1982).

183. Under the UNEP/UNESCO project for integrated pilot projects in tropical forest areas, a regional workshop on demographic analysis of lowland dipterocarp forests was held in Malaysia, and an international workshop on rain forest regeneration and management was held in Venezuela. Work has continued on projects in the Congo, Côte d'Ivoire, Papua New Guinea and Venezuela.

184. In collaboration with IUCN, action was initiated to demonstrate the application of ecological guidelines for development in tropical forests, focusing on Kalimantan, Indonesia. IUCN continued work to identify the "top twelve" most threatened species, and finalized the preparation of a paper on bioenergy tree plantations.

185. The umbrella project for national management of tropical and subtropical forest ecosystems developed with the Centro Agronómico Tropical de Investigación y Enseñanza in Costa Rica is now operational, and the first steps have been taken towards the preparation of a management plan for the Río Macho forest reserve in Costa Rica. Under a joint FAO/UNEP project on *in situ* conservation of forest genetic resources, assistance was provided to the Forest Research Institute in Malaysia and to the Centro de Datos para la Conservación in Peru.

186. In collaboration with the UNEP Information Service a video tape on tropical forests entitled "Burning our future" is under production. This video is specially aimed for public awareness promotion through national NGOs. UNEP also supported the WRI/ELC initiative of organizing regional workshops in Africa, Asia and Latin America in order to expand the role of NGOs in national forestry programmes. The African workshop was held in Nairobi in November 1986, and workshops for Asia and Latin America are planned for early 1987.

Other ecosystems (Budget subline 6103)

187. Increased pressure on highland ecosystems and the consequent destruction of vegetation cover, combined with the natural instability of some of these geologically active areas, have resulted in disasters such as floods and landslides affecting infrastructure developments and human lives. The recent floods in the Chilean capital, landslides in Nepal, floods in the Indian subcontinent, and the increasing cost of protecting mountain roads and railways in Europe have a cause in common—mismanagement and destruction of plant cover.

188. A number of governmental and non-governmental organizations such as FAO, UNESCO (under its MAB programme), the International Centre for Integrated Mountain Development, the International Mountain Society, IUBS and IUCN have been or are becoming involved in integrated management of mountain ecosystems.

189. The integrated pilot project on environmental management and protection of Andean ecosystems in Cajamarca, Peru is now completely operational. The implementing organization, the Development Corporation of Cajamarca, has ensured full participation by local farmers and staff of the University of Cajamarca.

Management of agricultural chemicals and residues (Budget subline 6104)

190. In the developing world, the year 1986 saw continued interest in the use of pesticides in crop and livestock production, and considerable concern about direct toxic effects on humans, the build-up of resistance in target and non-target organisms, the disruption of control by natural enemies and the appearance of pesticide residues in food commodities. Perhaps the most disturbing issue for the developing countries is increased resistance in

pests and vectors. According to a recent WHO expert committee report, control of pests affecting intensively farmed cash crops such as rice and cotton, for which 90 per cent of all the pesticides produced are used, is the main source of resistance in human disease vectors. However, an increasing number of pesticide-producing countries are providing data and other information on banned or severely restricted chemicals, including pesticides.

191. Following a number of preparatory meetings and inter-agency consultations in which UNEP was fully involved, the FAO International Code of Conduct on the Distribution and Use of Pesticides was finally published at the beginning of 1986. The objectives of this Code are to set forth responsibilities and establish voluntary standards of conduct for all public and private entities engaged in or affecting the distribution and use of pesticides, particularly where there is inadequate national law to regulate pesticides. The Code describes the shared responsibility of many segments of society to work together so that the benefits to be derived from the necessary and acceptable use of pesticides are achieved without significant adverse effects on people or the environment. It also addresses the need for a co-operative effort between Governments of exporting and importing countries to promote practices which ensure efficient and safe use while minimizing health and environmental concerns arising from improper handling or use. The Code also presents in detail the articles of the UNEP Notification Scheme for Banned or Severely Restricted Chemicals.

192. In pursuance of the decisions of the thirty-ninth World Health Assembly, held in May, informal discussions have been conducted in the area of agricultural production between FAO, UNEP and WHO, centring on action to control the tsetse fly in an environmentally sound manner, as well as efforts to integrate tsetse control programmes into rural development. In order to avoid a repetition of past mistakes, large-scale projects must be well designed and implemented, and pilot projects supported by UN agencies are required to demonstrate environmentally sound tsetse management.

193. A one-week meeting was held in April at CIDA headquarters in Hull, Quebec to finalize the findings and recommendations of a team which visited Botswana and Zambia in 1985 to review the status of tsetse control operations (*1985 Annual Report*, chap. IV, para. 207). Environmental dimensions were included in the findings, which are expected to be extremely valuable in the implementation of the Zambezi Action Plan (see above, under budget line 52).

194. A second International Conference on Plant Protection in the Tropics was held in Kuala Lumpur in June. Many technical papers were submitted and a detailed report on joint FAO/UNEP field demonstration and training programmes was presented. UNEP supported the attendance of one participant at this meeting.

195. The first International Conference on Tropical Entomology was held in Nairobi in August. Attended by some 400 participants, the Conference addressed the issues increasingly being faced by developing countries in their effort to increase food and livestock production and protect the health of their people. The Conference particularly noted the great shortage of trained manpower in all areas of entomology, and stressed the need for co-ordinated training efforts. Two UNEP-assisted entomologists from developing countries attended the Conference and presented papers on environmental topics.

196. The activities of the former UNEP/ICIPE Group Training Course on Components Essential for Ecologically Sound Pest and Vector Management Systems continue under the sponsorship of IDRC. This series of courses is primarily designed to acquaint young scientists from developing countries with recent advances in environmental pest and vector control strategies and methods. The ninth course was held in Nairobi in August.

197. With UNEP support, a training course aimed at creating self-reliance in ecological pest management in the tropics was held at the Regional Centre for Training in Plant Protection in Yaounde, Cameroon, in November—December. The aim was to provide three selected African countries with the capacity to design practical programmes in integrated crop pest and livestock vector management, in order to minimize the negative environmental effects of indiscriminate pesticide use. Twenty participants from Cameroon, Guinea and Guinea-Bissau were trained under a new approach emphasizing limited country participation.

198. The excellent collaboration between FAO and UNEP in the promotion of integrated pest control has continued. During the reporting period, the two organizations started an evaluation of the FAO/UNEP Global Programme on the Implementation and Development of Integrated Pest Control in Agriculture to see what was actually achieved in the field, and to what extent pilot demonstration cotton-growing programmes supported by UNEP in about 40 countries in Africa, the Near East and Latin America were replicated, with a view to providing a basis for new projects on integrated crop production. FAO and UNEP continue to consider candidates for membership of the FAO/UNEP Panel of Experts on Integrated Pest Control and to discuss how to strengthen its role in project formulation, development, field implementation and evaluation, and fund-raising. Because of this and the need to await the outcome of the current evaluation of completed projects under the FAO/UNEP Global Programme, the thirteenth session of the Panel, originally scheduled for November 1986, has been postponed to September 1987.

199. Under a UNEP project entitled “Promotion of appropriate procedures to minimize pesticide applications in favour of non-chemical methods and strategies”, 22 graduates from Ghana and Sri Lanka each were trained in the safe and efficient use of pesticides. Similar courses are to be held in various developing countries during 1987-1989, and work is continuing on the preparation of training guidelines on the efficient and safe use of pesticides. Meanwhile, guidelines on the promotion and application of biological control agents for use by developing countries are in their final stage of preparation, and are expected to be published during the first quarter of 1987. They will give emphasis to such issues as building an insectarium, rearing pathogenic fungi and assessing the impact of biological control programmes.

Wildlife and protected areas (Budget subline 6105)

200. Biological diversity in many species and ecosystems is declining at an alarming rate as wild animals and plants and their habitats are destroyed or depleted, especially in developing countries. Of the approximately 265,000 plant species in the world, more than 60,000 are at risk of extinction during the next century because of the destruction and degradation of the Earth's vegetation.

201. About 6,000 plants are known to be used in agriculture, forestry and medicine, while only 150 are used for intensive cultivation (about 20 species producing 90 per cent of the world's food). The loss of biological diversity is due largely to the increasing demands of the growing human population on natural resources and habitats to realize short-term economic gains, even at the expense of the long-term productivity of natural resources. UNEP approaches the problem of maintaining biological and genetic diversity (a) by promoting the establishment of protected areas; (b) by encouraging Governments to apply to non-protected lands the conservation principles outlined in the World Conservation Strategy and the World Charter for Nature; and (c) by promoting the formulation and implementation of regional and national conservation strategies and the implementation of the Action Plan for Biosphere Reserves.

202. During 1986, UNEP and its partners in the Ecosystem Conservation Group—FAO, IUCN, UNESCO and WWF—gave high priority to the formulation of comprehensive national conservation strategies. More than 30 countries, both developing and industrialized, report that they have embarked on the development of comprehensive conservation strategies and programmes at the national level, a clear indication of the positive response to the World Conservation Strategy since it was launched in 1980. Country experience in developing national conservation strategies was presented in a series of case-studies during the UNEP-supported World Conservation Strategy Conference held in Ottawa in May/June. Some 450 conservation scientists, government officials, academics, field workers and others interested in conservation were on hand to provide conceptual overviews of critical issues entailed in integrating conservation and development, to exchange information, debate conservation issues, and formulate recommendations and guidelines designed to update the Strategy so that it can continue to serve the world effectively in the crucial decades to come.

203. One of the priority countries selected by the Ecosystem Conservation Group for assistance in the preparation of a national conservation strategy is Uganda. Following a number of abortive efforts in this field in the past, UNEP and the Government of Uganda are working together to take urgent action to improve the natural resource situation in the country. In Somalia a wildlife and conservation review is being undertaken. UNEP was also represented at the Third General Assembly of the Inuit Circumpolar Conference at Kotzebue, Alaska, in July/August 1986, which recommended the formulation of an Arctic Conservation Strategy providing a framework for conservation policies in the circumpolar region encompassing an area of 2.5 million square miles, excluding the Soviet Arctic. Such a strategy would be the first truly regional application of the World Conservation Strategy. As a first step, an inventory of the animals harvested for subsistence by the Inuit people is being prepared.

204. The Bureau of UNESCO's MAB programme, which met in Paris in April, approved proposals to extend four existing reserves in the International Biosphere Reserve Network and agreed on the designation of nine sites as new additions to the Network. UNEP was represented at the ninth session of the International Co-ordinating Council for the Programme, held in Paris in October, which discussed progress made by FAO, IUCN, UNEP and UNESCO in undertaking joint activities to implement the Action Plan for Biosphere Reserves, and a panel's recommendations for further refining the biosphere reserve concept (which had been interpreted in different ways in different countries), and establishing criteria for selection of new reserves.

205. A very successful national workshop on guidelines for public participation in conservation programmes was convened in Nairobi in October under a joint UNEP/Kenya Wildlife Fund Trustees project. On the basis of a preliminary survey of the conservation situation in Kenya, the meeting reviewed the wildlife extension and training needs of key wildlife areas in Kenya and draft guidelines for public participation. It is hoped that policy action by the Kenyan Government based on the guidelines will be replicated in other countries and will lead to (a) increased public support for conservation of wildlife and other natural resources as a viable land use strategy; (b) increased involvement of young people and adults living in wildlife areas in extension and training programmes for wildlife resources management; (c) increased local community involvement in decisions regarding the management and utilization of wildlife and wildlands; and (d) better appreciation by the public of the economic and environmental benefits of conservation measures. For this purpose, UNEP plans to make the guidelines available for testing in other African countries and later also in countries in Asia and Latin America and the Caribbean.

206. UNEP continued to assist Governments in Africa to improve the management skills of junior, middle-level and high-level staff of wildlife and national park resource management organizations through a Wildlife Management Fellowships Programme. Under this programme, nine fellowships were granted to trainees from eight African countries to attend courses at wildlife management colleges at Garoua, Cameroon and Mweka, Tanzania. The Mweka college was selected from among 137 candidates as the winner of the 1986 Sasakawa Environment Prize. Since its establishment in 1963 the college has trained almost 1,000 graduates in wildlife and national park management from 16 African countries and a few from outside the region, and its graduates can now be found undertaking various management duties in virtually every protected area in Eastern and Central Africa.

207. UNEP, which provides a secretariat for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in Lausanne, Switzerland, published the proceedings of the fifth meeting of the Conference of the Parties to the Convention, held in April/May 1985 in Buenos Aires. In pursuance of resolutions adopted at the meeting, five UNEP/CITES consultants are to survey the global status of and trade in sea turtles, the status of the *Felidae* (wild cat) population in Bolivia and the status of cayman crocodiles in Bolivia, Brazil and Paraguay. Two other UNEP/CITES consultants have initiated surveys of the status of leopard (*Panthera pardus*) populations in sub-Saharan Africa, with particular reference to existing management policies and hunting practices. Also in accordance with resolutions of the CITES Parties, the Wildlife Trade Monitoring Unit in the United Kingdom is employed by the CITES secretariat to provide technical and scientific support and advice relating to international trade in wildlife. The Unit forms part of the international TRAFFIC (Trade Records Analysis of Flora and Fauna in Commerce) network, comprising 10 offices recognized by the secretariat which act as technical and scientific consultants to national government authorities responsible for CITES implementation.

208. Belize, the Dominican Republic, Singapore and Spain became Parties to CITES in 1986, bringing the total membership to 95. In addition, the Governments of Burundi and Ethiopia, which are not parties, have formally notified the secretariat of their intention to register existing ivory stocks and conform to CITES ivory trade control procedures.

209. At a seminar held in the United Kingdom in September, 56 participants representing 23 CITES Party States, Interpol and the Customs Co-operation Council discussed the problems of enforcing CITES regulations and made a series of recommendations for consideration by the Parties concerning improvement of enforcement procedures.

210. The Convention on the Conservation of Migratory Species of Wild Animals facilitates concerted action for the conservation of all migratory species, including terrestrial and marine mammals, fish, reptiles and birds, which cyclically and predictably cross national boundaries. With support from the Government of the Federal Republic of Germany, UNEP provides a secretariat for the Convention in Bonn, and published the proceedings of the first meeting of the Conference of Parties to the Convention, held in October 1985. In accordance with a decision taken at that meeting, UNEP has established a trust fund and invited contributions from the 22 Parties. During 1986, UNEP—in co-operation with IUCN, the International Waterfowl Research Bureau and UNESCO—continued to promote the implementation of the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (the Ramsar Convention). The latest update of the List of Wetlands of International Importance includes 354 sites covering more than 200,000 square kilometres, marking a significant increase in the application of the Convention.

211. UNEP and WWF were among the sponsors of an International Seminar on Wetlands Conservation and Sustainable Development in Latin America and the Caribbean, held in Brasilia in December 1986, and attended by 50 participants. The seminar provided an important forum for the development of a wetlands action strategy for Latin America and the Caribbean, which will be launched at the May/June 1987 Conference of Parties to the Convention.

Genetic resources (Budget subline 6106)

212. During 1986, the International Board for Plant Genetic Resources (IBPGR), which is supported by UNEP, continued the exploration, collection, evaluation and conservation of crop plant and tree genetic resources within a co-ordinated international programme. More than 100 countries are collaborating in this programme, and over 100,000 samples of crop germ-plasm have been deposited in the gene bank network established and co-ordinated by the Board to house the world base collections. National programmes and national genetic resources committees have been developed in many countries, and numerous Governments have increased their budgetary allocations for activities in this field.

213. With support from UNEP and FAO, field activities in the *in situ* conservation of forest genetic resources were initiated in Malaysia and Peru in 1986. The activities will cover *Calamus manan*, *Parkia speciosa*, *Shorea gratissima*, *Dyera costulata*, *Dryobalanops costulata* and *Neobalanocarpus heimii* in Malaysia, and *Cedrela, swietenia*, *Cedrelinga*, *Polylepis* and *Alnus* in Peru.

214. In 1986, under a joint FAO/UNEP project, pilot trials of animal genetic resources data banks in developing countries (see 1985 Annual Report, chap.IV, para. 230) were successfully completed. As a follow-up, plans for the establishment of regional data banks in Africa, Asia, Latin America and the Caribbean and the Near East were developed with the aim of providing easy access to information on the genetic characteristics of indigenous animal breeds and populations, introduced exotic breeds, cross-breeds, and the environments in which animals are kept, in order to promote more successful planning and implementation of livestock improvement programmes, increase the production of food and animal fibre and the use of draught animal power and identify breeds at risk and promote their conservation.

215. Throughout the year, with UNEP support, the regional Microbiological Resources Centres (MIRCENs) in Brazil, Egypt, Guatemala, Kenya, Senegal and Thailand continued to provide fellowships, grants and on-the-job training in environmental microbiology to nationals from developing countries, and continued the implementation of a number of joint pilot projects for the application of microbial resources for increased soil fertility and food production, pest and vector control, bioconversion of agro-industrial wastes and biodegradation of persistent environmental pollutants.

216. The collection, evaluation, preservation and periodic testing of *Rhizobium* strains and the production, quality control and field testing of *Rhizobium*/legume inoculants is progressing at the Dakar, Nairobi and Porto Alegre MIRCENs, as well as in the Sudan, with a view to popularizing the use of biological nitrogen fixation technology for increased soil fertility and legume protein production at the small farm level in developing regions while moving away from the use of costly and potentially polluting nitrogenous fertilizers.

217. The Cairo MIRCEN, in collaboration with various agricultural experimental stations, is engaged in screening programmes for the isolation and characterization of active microbial strains for controlling the house fly and mosquitoes, and for the biodegradation of pesticides in current agricultural practice in Egypt. At the Bangkok MIRCEN, 1,500 litres

of anhydrous alcohol per day has been produced from cassava on a pilot scale using locally isolated microbial strains.

218. A pilot plant consisting of a biogas digester was constructed in Guatemala under the joint responsibility of the Guatemala MIRCEN and an industrial firm for the bioconversion of polluting by-products of coffee-processing into biogas, organic fertilizers and animal feed.

219. The past decade has witnessed the emergence of a biotechnology revolution. The international scientific community has shown considerable interest in documentation on microbial genetic resources as the corner-stone of biotechnology. However, the microbiological information base is not well organized, there is no co-ordination among different systems for the storage and retrieval of information on potentially useful microbial strains and cell lines, and the information available on many small collections of interesting or unique organisms in developing countries is sparse. Following activities in 1985 (see *1985 Annual Report*, chap. IV, para. 232), sufficient funds for the establishment of a secretariat for the International Microbial Strain Data Network were received in 1986. The secretariat will be located at the Biotechnology Centre at Cambridge University. UNEP also provided support for the expansion and updating of the World Data Centre for Micro-organisms and its relocation from Australia to Japan.

220. In recent years, the potential dangers inherent in some fields of biotechnology, such as genetic engineering and the release of genetically manipulated organisms in the environment, have created much concern. In 1986, in response to these concerns, UNIDO, UNEP and WHO set up a joint Working Group on Biotechnology Safety which held two meetings with the following aims: (a) to review existing safety practices as they apply to contained and uncontained applications; (b) to review existing safety rules and regulations and environmental protection acts; (c) to assess the awareness of biosafety, particularly in developing countries; (d) to review legal requirements vis-a-vis biotechnology on a global basis; (e) to consider elements necessary to develop minimal guidelines for laboratory and industrial-scale facilities; and (f) to examine possibilities for the development of expertise in biotechnology safety programmes for developing countries.

Lithosphere (Budget subline 6107)

221. Work continued on the UNEP/UNESCO/USSR project "Geology and the environment". The second session of the International Scientific Council on Geology and Environmental Problems was held in Paris in April 1986, and reviewed the scientific programmes for planned seminars and the preparation of international guidelines on geology and land use planning. A workshop and working group meeting on the impact of mining on the environment were held in Tallinn, USSR in June. The participants discussed a draft monograph on this subject which is due to be completed in 1987.

ARID AND SEMI-ARID LANDS ECOSYSTEMS AND DESERTIFICATION CONTROL (Budget line 62)

Implementation of the Plan of Action to Combat Desertification

222. The principal objectives under this budget line are those set out in the Plan of Action to Combat Desertification: to promote international co-operation in the field of desertification control; to assist Governments, particularly those of developing countries, to prevent and arrest the advance of desertification and, where possible, to reclaim desertified land for productive use; and to promote, within ecological limits, sustainable productivity of arid, semi-arid and subhumid areas in order to improve the quality of life of their inhabitants.

223. Between the adoption of the Plan of Action in 1977 and 1985 a total of 30 desertification control projects were completed at a cost of over \$15 million, of which UNEP's share was \$11 million. Currently over 20 projects are under implementation at a cost of approximately \$51 million, \$21 million from UNEP and the balance from various co-operating agencies and supporting organizations. The bulk of the current projects fall within UNEP's strategy for accomplishing the above objectives by establishing pilot projects for testing and demonstrating methodologies for sustained productivity; assisting countries to formulate national plans for combating desertification; stimulating and co-ordinating action within the international community and the UN system; building up a computerized desertification data base and disseminating information for use in desertification control; promoting national, regional and global co-operative action in training and research in desertification control technologies through the establishment of networks of institutions and NGOs engaged in desertification control; and co-operating with national and regional institutions in the assessment and monitoring of desertification through the application of new methodologies within the means of developing countries.

Action at the national level

224. At the national level, the major efforts are aimed at assisting countries to formulate and implement national action plans for combating desertification, supported by appropriate land use policies designed to orient their development patterns toward sustainable development. The new policy of concentrating limited resources on selected countries has been applied in the Sudan, which has been assisted by UNEP to formulate a fully fledged national plan of action to combat desertification. The Government has taken the major step of declaring rural development, drought rehabilitation and desertification control as the main areas of concentration under the UNDP third country programme for 1988-1991. Work was initiated to develop some of the priority projects to be implemented under the plan, notably a feasibility study to prepare action plans for the development of three pilot zones for stock raisers. UNEP is to assist the Government in soliciting finance for the proposed projects. Another priority area is the establishment of a Geographical Information System containing natural resource data, for which a UNEP-financed consultant prepared a feasibility report with recommendations which are being discussed by UNEP and the Sudanese Government.

225. The national plan of action to combat desertification in Tunisia, formulated in 1985 with UNEP assistance, continues to be implemented vigorously. A pilot project for desertification control in southern Tunisia was successfully completed in 1986. Technicians of the Institut des Régions Arides in Medenine, which implemented the project in co-

operation with UNESCO, received training in satellite imagery analysis and cartography, and workers learned techniques of shrub-planting and sand dune fixation. Reports were prepared on assessing changes in vegetation and sand dune extension over a 10-year period, successes and failures experienced with forage shrub plantations, and the use of indigenous plants for sand dune fixation. A map of areas to be rehabilitated was also prepared. A seminar to evaluate the project activities was organized by the institute and held in Djerba at the end of the year.

226. National plans of action for combating desertification were also prepared by the UN Sudano-Sahelian Office (UNSO) on behalf of UNEP, for Burkina Faso, Benin and Senegal. A joint ESCWA/FAO/UNEP mission carried out field work in Jordan to assist the Government to prepare a draft national plan to be finalized during the first half of 1987. Following discussions between UNEP and the Arab Centre for Studies of Arid Zones and Drylands, preparatory work on a national plan for combating desertification in the Syrian Arab Republic has started, and the draft plan is expected to be ready for discussion with the Government early in 1987.

227. Pilot projects based on multi-purpose integrated village and family afforestation financed by AGFUND have continued to make satisfactory progress in Benin, Burkina Faso, Democratic Yemen and Djibouti. In Benin the first phase has been completed: three central nurseries producing 250,000 seedlings a year have been established, and villages and schools in the project area have helped to plant more than 250,000 trees. The pilot project has been successful in demonstrating plantations of suitable trees for firewood, timber, forage, soil regeneration and wind-breaks, and as cash crops and food crops, all of which contributes to reducing deforestation. Some 180 technical personnel, including local farmers, have been trained in tree-planting techniques. The pilot project has had a positive impact by involving local people and schools, with the result that the EEC has allocated additional funding to replicate it in a fourth district in the country.

228. The Burkina Faso pilot project has not been very successful so far, as repeated droughts have led to low plant survival rates and necessitated several plantings. A total of 160 hectares have been planted with trees, and 100 local farmers have been trained in nursery management. The first phase is to be completed in 1987.

229. A 2,200-hectare pilot project on rangeland development and rehabilitation and protection of land around livestock-watering points, which was initiated in 1985 with the support of UNEP in the Gambia, continued throughout 1986. Activities carried out include production of pasture seed to be used in rehabilitation of degraded rangeland, seeding of 3,000 hectares, afforestation to protect land around the watering points, training in rangeland management and forage production and other training activities.

230. Under a pilot project on development of natural resources and combating desertification in the coastal plain of Djibouti, various studies and a test programme to introduce forage species under irrigation have been conducted at 10 sites. Other activities planned include a study of water resources and soil conservation, training of the local population and a programme for the dissemination of research results to the farmers.

231. A pilot project on combating desertification through integrated agricultural development in Democratic Yemen has progressed well. Activities remaining to be completed include construction of two reservoirs and an irrigation system, afforestation and an environmental assessment of the impact of the project. The local farmers are reported to have adopted the recommended practices and irrigation methods.

232. Regional integrated development schemes have been prepared with UNEPCOM assistance for the Governments of Mali and Peru; both include land use components and

proposals for combating desertification. The Peruvian scheme contains concrete proposals for the development of the productive and service sectors in the department of Ica, with special emphasis on protection of the environment through combating desertification. In Mali the regional scheme for the Timbuktu area affected by desertification contains measures to tackle desertification problems through agro-forestry, water and soil conservation, village development and range development. The Malian Government is seeking support for a pilot desertification control project in Timbuktu which will include the establishment of a centre for training technicians and farmers in modern agricultural techniques.

233. UNEP's Desertification Control Programme Activity Centre is responsible for implementing the pilot projects on villages and stock-raising zones which form an important part of the Cairo Programme for African Co-operation adopted by the First African Ministerial Conference on the Environment. Funds obtained from the Norwegian Government through the Clearing-house have been used to assist the Government of the Sudan to prepare feasibility studies and draft project proposals for three stock-raising zones, and similar studies and project proposals have been prepared in Uganda. As the next step UNEP will assist the Governments to obtain funding for the pilot projects from UNDP and other donor agencies. Discussions have also been initiated with the Governments of Egypt, Ethiopia and Senegal.

Action at the regional level

234. At its twelfth session the Governing Council recommended that the establishment of UNSO-like joint ventures to combat desertification in other regions should be explored. Representatives of the ESCAP countries were consulted and expressed the view that ESCAP and UNEP's Regional Office for Asia and the Pacific should be equal to the task of catalysing and co-ordinating desertification control activities in the region.

235. In its decision 13/30 the Governing Council urged the Executive Director to seek alternative sources of funding to assist the countries of the Southern African Development Co-ordination Conference (SADCC). The Executive Director suggested that the SADCC secretariat's capability in the field of desertification control could be reinforced through the secondment of two experts to be obtained by UNEP from co-operating Governments, as well as the provision of technical and scientific backstopping for the experts by UNEP in the formulation and implementation of anti-desertification programmes. This offer was welcomed by the Executive Secretary of SADCC. Following negotiations with UNEP, the Government of Finland has provided at its expense a livestock and range management expert who, pending the outcome of consultations with SADCC, will be based at UNEP headquarters to deal with desertification problems among southern African countries.

236. In response to the provisions of Governing Council decision 12/10 relating to regional networks of NGOs active in the field of desertification control, action was taken during 1986 to strengthen the African NGOs Environment Network, in particular by funding support for NGO field projects in selected countries to implement projects in line with the Cairo Programme. Projects have already been identified in Burkina Faso, Mali and Senegal. Training programmes are also to be held for NGO staff on administration and implementation of desertification control techniques, and "how-to-do-it" papers are to be prepared for use by field workers of NGOs.

237. Following discussions with NGOs in Asia and the Pacific, a network of NGOs engaged in anti-desertification activities is to be formed within the existing Asia-Pacific Peoples' Environmental Network. Implementation of the project will begin in 1987. In Latin America UNEP financed preparatory work on a directory of NGOs engaged in desertification

control in Argentina, Chile, Colombia, Peru and Uruguay as a first step towards the establishment of a network. This is to be followed by discussions during 1987 with ECLAC and the NGOs themselves.

238. With modest support from UNEP a project in southern India involving reforestation and training has resulted in the production of over 2 million tree seedlings, the planting of over a million trees, the establishment of 21 nurseries, the creation of new schoolchildren's nurseries (now numbering over 1,000) and the holding of 10 training courses for farmers and schoolchildren in five forest training centres. This project is receiving strong support from the Indian Government, which recognizes the value of a highly successful community forestry movement and a good demonstration of proper land use management.

239. ESCAP, UNEP and UNESCO jointly sponsored an intergovernmental meeting in Bangkok in September 1986 to consider the establishment and operation of a regional research and training network for the ESCAP region. The meeting, which was attended by representatives of 13 countries from the region as well as FAO, UNDP, UNEP, UNESCO and WMO, adopted a timetable for activities to be carried out during 1987 and 1988. Work on the establishment of a training and communication programme on desertification control for the Arab States of Western Asia has been unsuccessful so far due to lack of sufficient support for the project from the Governments of the region.

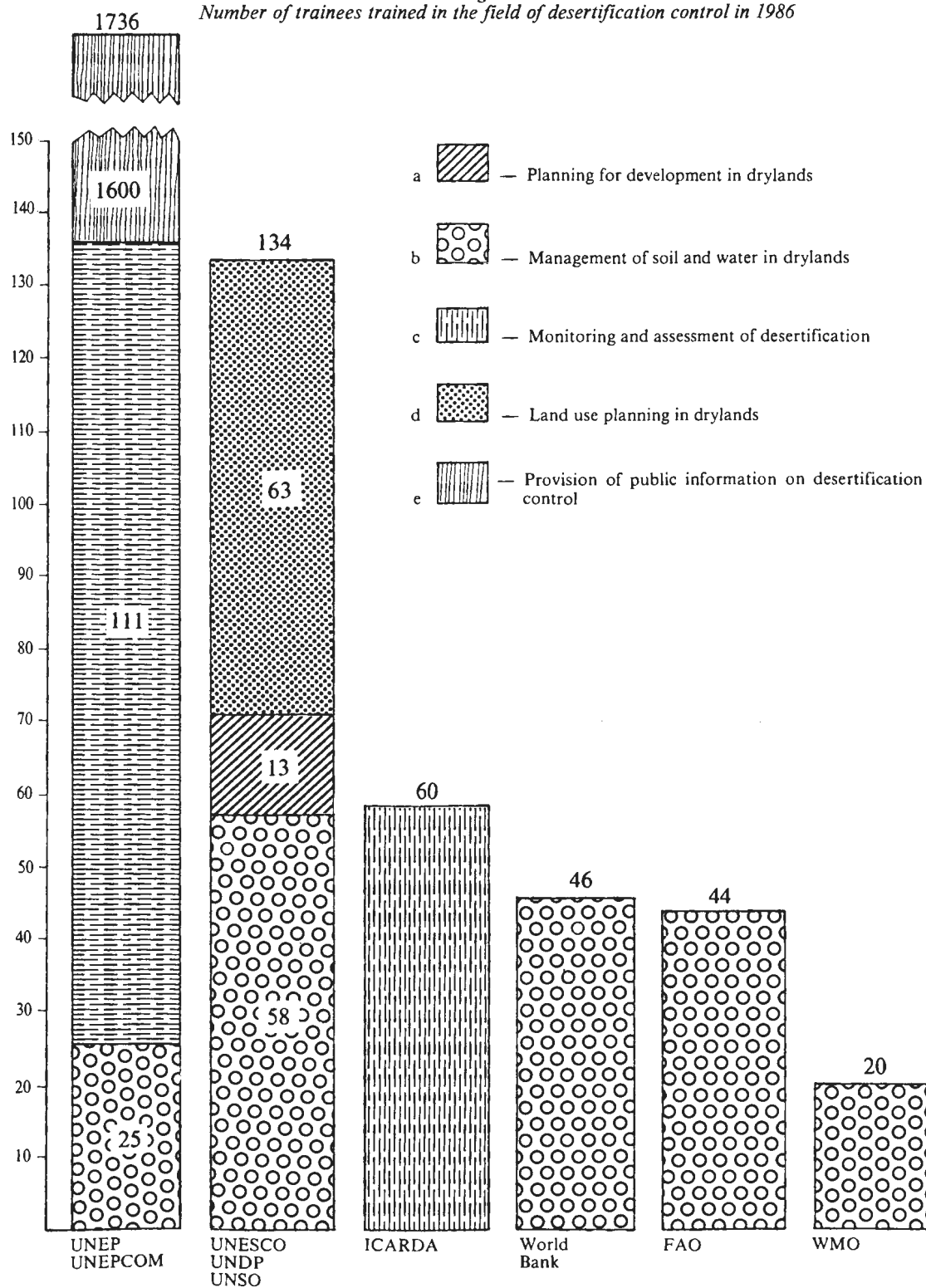
240. The establishment of afforestation and sand dune stabilization networks has been entrusted to FAO by the Inter-Agency Working Group on Desertification (IAWGD), which recommended that the initial focus should be on establishing a network for North Africa and the Sudano-Sahelian region, where significant activities directed at sand dune problems are already under way. FAO reports that work has been started on the establishment of a sand dune stabilization network covering Algeria, Democratic Yemen, the Libyan Arab Jamahiriya, Mauritania, Morocco, Tunisia, the United Arab Emirates and Yemen under a project funded by UNDP. In Latin America, the functions of an afforestation network are performed by existing networks for watershed management and agro-forestry. There are plans to look into ways and means of reinforcing the networks, notably by publication of newsletters.

Action at the global level

241. UNEP's Desertification Control Programme Activity Centre continued training programmes under projects in co-operation with UNEPCOM, the Government of China, the members of IAWGD and regional training institutions. The aim of the training is to create awareness about the threat of desertification and to enhance the capabilities of technicians from developing countries to deal with desertification problems. During the year under review, a total of 2,184 trainees were exposed to training programmes on desertification control. Figure 19 shows the distribution of the trainees according to the five main areas of training recommended by the Governing Council, and the agencies involved. About 80 per cent of the trainees (1,600) were covered under the category "Provision of public information on desertification control", which was organized largely in co-operation with the Millions of Trees Club, an Indian NGO. This trend will continue as activities with NGOs increase with the establishment of regional networks in Africa, Asia and Latin America.

242. The other areas of training will be slow in picking up mainly because of the high costs of providing training in these specialized areas. The training of 25 technicians in soil and water management in the USSR under a UNEPCOM project cost over \$200,000. To minimize such costs it is proposed to put more emphasis on training courses conducted at

Figure 19.
Number of trainees trained in the field of desertification control in 1986



the regional level, and where possible to bring experts from training institutions in developed countries to participate in training courses held in the developing countries. UNEP has been discussing a joint training course on desertification assessment and control for Latin America to be held at the Instituto Argentino de Investigaciones de las Zonas Aridas in 1987. Similar training courses are planned in association with SADCC, UNEPCOM and UNESCO, and for the countries of Western Asia in co-operation with the Arab Centre for Studies of Arid Zones and Drylands. Evaluation of training programmes has now become an integral part of the training activity.

243. During 1986 UNEP took action to establish a Desertification Information System, which will make it possible to build and disseminate to Governments a data base on desertification and its control. A micro-computer with appropriate peripherals has been installed, and a programme for development of data bases has been set up. Thus far five data bases have been designed and fully tested: an annotated bibliography of publications and reports; a compendium of all UNEP and other UN system projects and activities in the field of desertification; an annotated directory of over 500 institutions and organizations around the world involved with desertification control work; a compendium of technical information related to wind erosion and particle transport and deposition; and a bibliography on wind erosion.

244. A related activity involves assisting Governments in the establishment of Geographical Information Systems, which should enable them to assess and plan natural resources utilization and desertification control activities with greater accuracy and efficiency. In addition to action taken in the Sudan in this connection, which was mentioned above, a pilot project has been formulated for testing and refining the FAO/UNEP Provisional Methodology for the Assessment and Mapping of Desertification in Kenya. Project implementation will begin early in 1987 in co-operation with GEMS and the Kenya Rangelands Ecological Monitoring Unit. The planned output of the project, consisting of a workable methodology and a set of desertification indicators, will contribute to building the data base and also to the dissemination and application of the assessment methodology in countries affected by desertification.

245. As part of its efforts to create awareness of the threat of desertification, and the Plan of Action to Combat Desertification, UNEP produced a number of films. A 30-minute television documentary wholly financed by UNEP entitled *Tomorrow's Famine*, which explores the link between continuing land degradation and losses in food production in Africa, is now being marketed world-wide. The film *Trees for Tomorrow*, completed in late 1985, which is based on a UNEP-supported reforestation movement in southern India, was broadcast on Indian and Kenyan television on World Environment Day. It has now been distributed to UN Information Centres in nine countries in Asia and the Pacific, and is available for loan on request from the Desertification Control Programme Activity Centre on VHS (PAL), as is the film *Tomorrow's Famine*.

246. *Crowded Desert*, which was produced by the Television Trust for the Environment and Central Independent Television in the United Kingdom with partial funding by UNEP, was broadcast in India in June and is now being marketed. Another film to which UNEP contributed, *China—Shifting Sands* is scheduled to be shown in Britain in early 1987.

247. The initial UNEP grant to the Television Trust for the Environment and Central Independent Television, dating from 1983, continues to bear fruit. Following *Seeds of Despair* in 1984 and *Seeds of Hope* and *After the Harvest* in 1985, a one-hour version of the story of the Ethiopian famine entitled *Seeds of Hope, the Village* appeared in 1986. These films, which offer the most detailed available record of the period preceding, during and following the devastating Ethiopian drought and famine, have enjoyed great critical acclaim and have won several awards in the United States. A short documentary on the use of the

camel in combating desertification and increasing food security in drought-prone areas was produced with UNEP support for the "Roving Report" series of Worldwide Television News, which is shown in over 30 countries. During the period 1984-1986 UNEP has spent a total of \$100,000 on production of film materials on desertification problems.

248. The commentated single-projector slide presentation "Harvest of dust", first shown at the twelfth session of the Governing Council in multi-projector format, has been produced in Arabic, English, French and Spanish. Copies have been distributed to the UNEP regional and liaison offices, and may be borrowed from them or from the Desertification Control Programme Activity Centre.

249. As a follow-up to the fifth session of the Consultative Group for Desertification Control, UNEP co-ordinated consultations during 1986 between potential donors and Democratic Yemen, Egypt, Guinea, Lesotho, Mali and the Syrian Arab Republic, concerning the financing and implementation of project proposals in which interest had been expressed. Four projects of the six which had received indications of support at the session are now under implementation in Egypt, Guinea, Lesotho and Mali, with additional financing of \$6.9 million secured.

250. UNEP assisted Governments in the preparation of fully fledged project documents for 14 projects in the three main areas of focus agreed at the fifth session—monitoring, policy formulation and co-ordination, and water resources management—for consideration at the sixth session. Replies to a questionnaire sent to Governments and international organizations to solicit information on their project activities in the three areas indicated that in general anti-desertification programmes and projects have not been integrated into the development priorities of most countries affected by desertification. Furthermore, efforts to combat desertification are hampered by a lack of national plans and co-ordination mechanisms under which priority actions are clearly identified for assistance programmes.

251. Although there is general recognition that the Group remains the only viable mechanism for mobilizing resources and offering a co-ordination forum for multilateral and bilateral assistance programmes for anti-desertification projects, fundamental problems continue to prevent it from functioning effectively. There is still a lack of clear understanding by the international donor community and recipient countries alike of the Group's actual role and functions, particularly with regard to the mobilization of resources and co-ordination of assistance programmes. There is a need for the international donor community to become more actively involved in and supportive of the work of the Group, while the recipient countries must ensure that project proposals they submit to the Group for consideration and support are prepared in the context of their national development priorities.

252. IAWGD held its second *ad hoc* meeting in Vienna in March and its thirteenth regular meeting in Geneva in September. The regular meeting, chaired by the Executive Director, had as its main agenda item a general policy discussion on the functions of the Group. Continuing desertification, the failure of the international community to contribute to the Special Account and the need to obtain additional and predictable financing for the implementation of the Plan of Action were identified as the main issues the Working Group should address. There was general agreement that the Group should co-operate in the collection and dissemination of data and information on desertification and its control. Agency representatives agreed to co-operate with UNEP in its policy of concentration on selected countries provided that the Governing Council so decided and that additional funds were made available for the purpose. Some participants cautioned that their own priorities might be at variance with the choice of countries made by UNEP.

253. In 1986, though 10 years had passed since the adoption of the Plan of Action, various parts of the developing world continued to suffer sporadic food shortages as much land was lost to desertification. Land lost through various forms of desertification or degraded to desert-like conditions remains at the level of 6 million hectares a year, as reported at the UN Conference on Desertification in 1977, and large areas of the world face a high or very high risk of desertification (see figure 20). Furthermore, 21 million hectares of land a year are reduced to zero or negative economic productivity, as revealed by the general assessment in 1984. If this trend continues, in less than 200 years there will not be a single fully productive hectare of land on Earth (see figure 21). Yet the international community showed no significant departure from its traditional reluctance to contribute to financing the implementation of the Plan of Action.

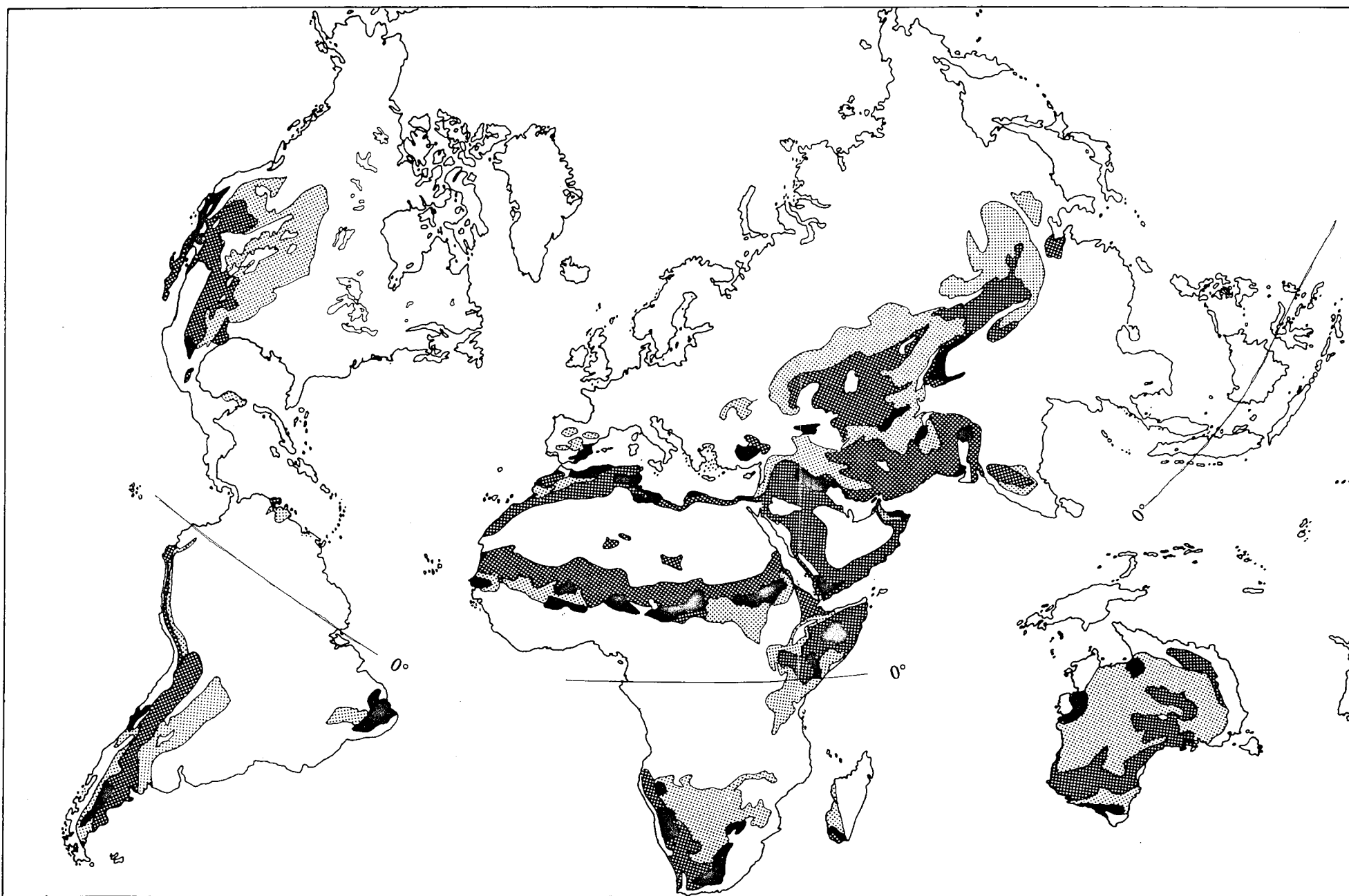
254. A measure of encouragement may be drawn from the growing consensus among the international community and the developing countries affected by desertification that the proper response to the crisis triggered by intermittent droughts and other natural disasters is to be found in long-term sustainable development as a preventive measure and an insurance. The action taken by the UN General Assembly at its special session on the critical economic situation in Africa in 1986 (see chap. II above, paras. 6-7) was a major demonstration of how this consensus can be translated into commitment to reinforce regional efforts, which in turn should form a strong base for national actions toward sustainable development. UNEP welcomes this trend, particularly as several of the actions called for in Africa's Priority Programme for Economic Recovery 1986-1990 adopted by OAU and the UN Programme of Action for African Economic Recovery and Development 1986-1990 interface very closely with the Plan of Action and with the Cairo Programme for African Co-operation.

255. Against the background of these programmes for action, UNEP intends to give priority to assisting countries to formulate plans for combating desertification as part of overall national development plans. Algeria, Benin, Egypt, Ethiopia, the Gambia, Kenya, Mali, Senegal, the Sudan, Zaire, Zambia and Zimbabwe have indicated their willingness to participate in the programme agreed in Cairo for the development of pilot projects covering 150 villages (three per country) and 30 semi-arid stock-raising zones (one in each of 30 countries). Funding provided by the Norwegian Government through UNEP's Clearing-house has been used to carry out project formulation studies in connection with this programme in the Sudan and Uganda.

256. At the regional level UNEP plans to reinforce desertification control actions through the Deserts and Arid Lands Committee, one of the committees to be set up under the Cairo Programme, with members including OAU, ADB, the main subregional organizations in the three African deserts (SADCC for the Kalahari-Namib desert, the Dakar Conference (COMIDES) for the Sahara, and IGADD for the Somali-Chalbi desert), river basin authorities, economic communities and the African NGOs Environment Network. The proposed priority activities for the Committee include development of subregional data bases and monitoring systems for each of the three deserts, and selection and implementation of regional priority projects in line with the Cairo Programme and the UN Programme of Action.

257. The International Conference on the Economics of Dryland Degradation and Rehabilitation, which has already been mentioned under subline 2101, was a timely and significant initiative in mobilizing international action in the urgent task of developing an acceptable practical method for analysing the causes of desertification and quantifying the economic and social benefits of halting and reversing desertification. The guidelines to be produced as an output of the conference and the subsequent regional workshops should be very useful to planners, technicians and managers in taking decisions on the allocation of resources and the implementation of programmes and projects for the rehabilitation of

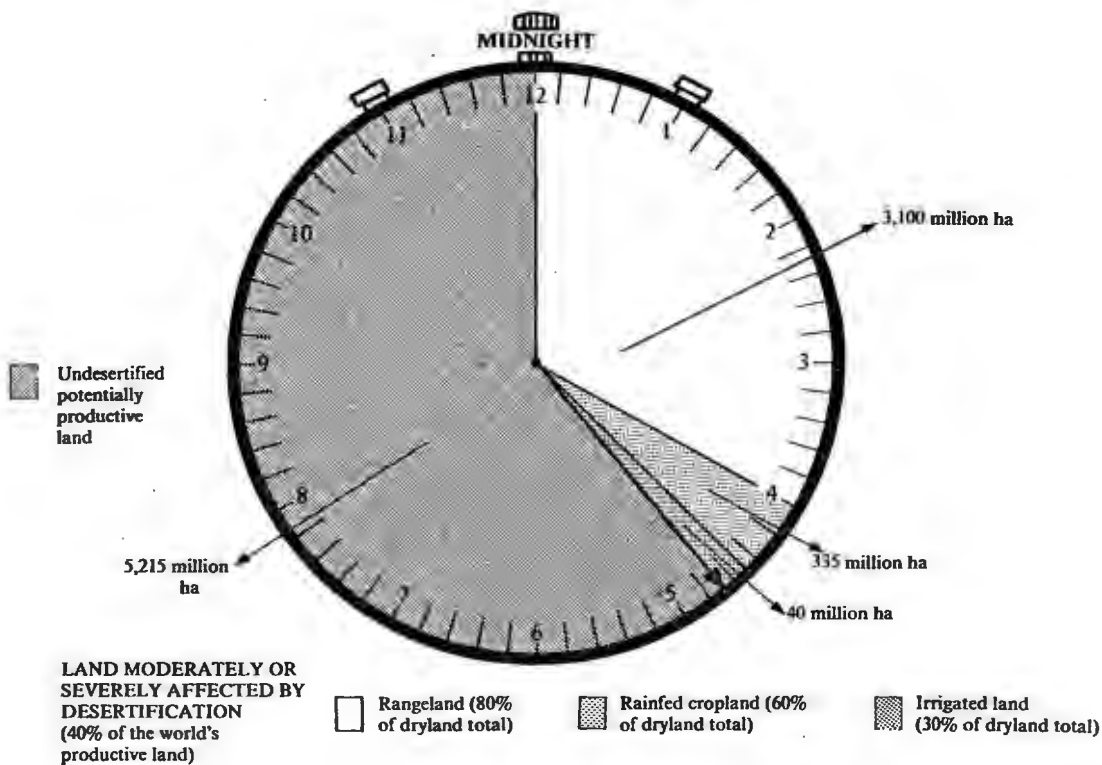
Figure 20.
Degree of desertification hazard (in zones likely to be affected by desertification)



Source: Adapted from the United Nations Map of World Desertification (A/Conf.74/2).

VERY HIGH HIGH MODERATE

Figure 21.
The time bomb of desertification



The clock is ticking, an environmental time bomb. It is now 4:48 p.m. At the rate of 27 million hectares lost a year to the desert or to zero economic productivity, in a little less than 200 years at the current rate of desertification there will not be a single, fully productive hectare of land on earth. It will be the earth's midnight. We can expect the rate to increase as less land is exploited by more people. We can also be sure that a major socio-economic catastrophe of cataclysmic proportions would engulf the earth long before the last hectare succumbed. We are already feeling the first tremors of that catastrophe.

Source: UNEP secretariat.

desertified lands. Together with the complementary case-study reader they should serve as valuable training and research materials in the evaluation of the socio-economic costs and benefits of dryland development projects, and in the preparation of project proposals for consideration by the Consultative Group.

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More efficient use of fuelwood

269. Fuel-efficient stoves can lead to substantial reductions in the demand for fuelwood. The design of efficient stoves made from locally available materials was originally carried out in the Gambia in a project financed by DANIDA. By 1986, the new designs had so proved themselves that their widespread distribution could begin in earnest. With continued financing from DANIDA, trained extension agents are working with the people to promote the use of the new stoves.

270. In 1986 fuel-efficient stoves were taken to Mauritania in a project financed by Norway, to Burkina Faso with funding from SIDA, to the city of Kayes in Mali with the help of Norway, to the Niger, again with financing from NORAD, and to the Sudan with support from DANIDA. To bring stoves to another country means that arrangements must be made for local manufacture as well as for the training and deployment of extension agents.

Water resources

271. October 1986 saw the launching of a three-year project for the integrated development of the Lake Faguibine system in Mali. With a contribution of \$1.8 million from Norway, plus funding from UNDP and food worth \$260,000 from the World Food Programme, the project is aimed at achieving self-sufficiency in food through livestock-raising, lake fishing and intensified agriculture. A feasibility study will gather current knowledge of the lake ecosystem and identify optimal methods of intervention. Following stabilization of sand dunes along the channels feeding the lake, the flow of water in the channels will be regularized and improved.

272. An ongoing project in the Gambia financed by Australia with the participation of the UN Capital Development Fund is constructing a diversion weir and irrigation works to improve the productivity of a low-lying agricultural area. In Cape Verde, construction began on a desalination plant in Boa Vista. Throughout the region UNSO is engaged in a variety of small projects directed toward the development of water resources. These include the construction of dams and irrigation projects, provision of access to underground aquifers, the establishment of watering points for livestock and the investigation of hydrological problems.

Range management

273. A second phase of the project for the integrated development of Mali's lake region began in June, with funding of \$430,000 from Norway and food contributions from the World Food Programme. This project is aimed at the large-scale regeneration of *bourgou* pasture and the prevention of overgrazing on degraded rangelands in the rich inland delta region.

274. A new centre in Senegal for the monitoring of pastoral ecosystems began operations in 1986 with funding from DANIDA. UNSO also commissioned a project by ILCA looking toward the possible establishment of a research network on the one-humped camel (*Camelus dromedarius*), with its great potential for productive use in the Sahel, a region to which this animal is ecologically suited.

Soil management and sand dune stabilization

275. Efforts to stabilize moving sand dunes are proceeding in a number of places in the region. In 1986, the largest such projects were under way in Mauritania, Senegal and Somalia, using advanced methods of fixing dunes by vegetation. For Mauritania, UNSO

obtained \$5 million from DANIDA for a four-year extension of a major, nation-wide sand dune stabilization programme. The project will introduce integrated rural development activities embracing pastoral, agricultural and forestry systems, and will strengthen the forestry research centre to assist in these activities.

276. In Cape Verde, soil protection in the Sao Joao Baptista Valley was the central focus of an integrated programme financed by the Government of Norway that included ground-water development. This programme entered its second phase in 1986 in accordance with a master plan that provides for full participation by the local communities. In 1986, Canada underwrote a test programme for the regeneration of saline soils in irrigated areas in Senegal.

Planning and programming

277. Effective programming seeks to avoid a piecemeal approach to combating desertification. The regeneration of one district alleviates the pressure on others. The trend is toward integrated programming, in which the various programme elements support and strengthen each other. Integrated programming is facilitated by national strategies or plans of action to combat desertification which operate within a long-term perspective and in which the various projects impact on each other. UNSO continues to provide technical assistance to Governments in the formulation of such plans and strategies. For example, as a follow-up to a donors' round table held in Mali in December 1985, UNSO contributed \$50,000 to provide the Government of Mali with technical assistance in the further elaboration of its national plan of action to combat desertification.

278. In May 1986, UNSO dispatched a multidisciplinary planning and programming mission to Tanzania to provide technical assistance to this newest participant in UNSO's anti-desertification mandate. Of 23 desertification control projects identified, DANIDA is preparing to finance one for the development of an effective system of mass propagation and distribution of planting stock for village afforestation programmes, fuelwood plantations and industrial tree plantations.

HEALTH AND HUMAN SETTLEMENTS (Budget line 71)

279. This budget line is divided into four sublines: (a) Environmental health; (b) The International Register of Potentially Toxic Chemicals (IRPTC); (c) Working environment; and (d) Human settlements.

Environmental health (Budget subline 7101)

280. Recognition, control, evaluation and assessment of the health risks of exposure to chemical and biological agents in the environment is one of the major thrusts in this area. A clean, healthy environment is important for both human and other animal and plant life. During 1986, the world experienced two major industrial accidents—one due to a physical agent (Chernobyl) and the other to chemical agents (pollution of the Rhine), both in developed countries, even before a final assessment of damage to human and environmental health caused by the Bhopal tragedy is available.

281. During the year, ten reports in the Environmental Health Criteria series were published by WHO with the support of ILO and UNEP. These reports evaluate the risk to human health and the environment associated with exposure to chemicals, thus providing a

basis for regulatory activities. A number of previously published reports are being revised, and addenda are being prepared. A noteworthy feature of the addenda is their strong emphasis on the effect of chemicals on non-human biota.

282. Inadvertent exposure of microbes, plants, animals and humans to genotoxic agents contributes to increased mutation frequency and cancer incidence in humans, but can be reduced through identification and control of such chemical and physical agents. Concern in this area continues to provide the major impetus for the development and application of short-term tests for genotoxicity. The results of an international collaborative study under the auspices of IPCS to clarify the role of *in vitro* short-term tests were published under the Environmental Health Criteria series as a "Guide to short-term tests for detecting mutagenic and carcinogenic chemicals in the environment".

283. Development of resistance in pests and vectors of disease has now become a major environmental concern. When resistance develops, the normal practice is to increase the pesticide dosage, thus causing enhanced contamination of ecosystems and increased numbers of cases of chronic occupational poisoning among field workers. A total of 50 pest species are now recorded as resistant to one or more pesticides, including 13 that have developed resistance to compounds other than dieldrin/hexachlorohexane since 1980. Of the 50 species, 49 show resistance to DDT, 24 to organophosphorus compounds, 14 to carbamates and 10 to pyrethroids; 14 species show resistance to three or four chemical groups. At least 11 of the 50 resistant species are important vectors, namely *A. albimanus*, *A. arabiensis*, *A. culicifacies*, *A. fluviatilis*, *A. gambiae sensu stricto*, *A. labranchiae*, *A. pseudopunctipennis*, *A. sacharovi*, *A. sergentii*, *A. sinensis* and *A. stephensi*. This was the conclusion reached by the WHO Expert Committee on Vector Biology and Control at its last meeting in Geneva in November 1985, when it met to review the development of resistance of vectors and reservoirs of disease to pesticides.

284. The sixth meeting of the WHO/FAO/UNEP Panel of Experts on Environmental Management for Vector Control took place in Geneva in September. The Panel has been instrumental in the development of guidelines to enable engineers to forecast the vector-borne disease hazards involved in water development projects, and it encourages studies on the long-term effectiveness of environmental management measures. The Panel agreed that field testing guidelines for vector-borne disease implications of water development projects needed to be produced, that there was a need to promote water management practices through appropriate pricing schemes, and that the farmer needed to be involved in the decision-making process in irrigation schemes.

285. The Swiss pharmaceuticals company Hoffman La Roche is planning to start testing a malaria vaccine. In co-operation with New York University scientists, company researchers have isolated and identified the surface antigens in the sporozoite stages of the parasite. Hoffman La Roche scientists are seeking antigens from the other parts of the parasites' life cycle to develop a multiple product that gives broader protection. A vaccination scheme is to be organized in co-operation with WHO. Meanwhile, genetic engineers working for Biogen in the United States have isolated and produced a number of surface antigens of the parasites' merozoite forms. These are to be used in a vaccine intended to interrupt the disease cycle by preventing the malaria merozoites from infecting the red blood corpuscles. The vaccine will need extensive testing before it can be marketed.

286. Malaria, schistosomiasis, filariasis (including onchocerciasis), the trypanosomiasis (African sleeping sickness and Chagas' disease), leishmaniasis and leprosy are the main tropical diseases covered by the WHO/UNDP/World Bank Special Programme for Research and Training in Tropical Diseases, which concentrates on the promotion of research and manpower development in endemic countries. UNEP is an active participant in this programme, in which malaria has been given high priority because of its public health

impact over a large area of the world, and because the efficacy of current control measures is being increasingly compromised by the emergence and spread of technical problems, such as the resistance of *Plasmodium falciparum* to chloroquine in numerous countries in Africa, Latin America and Asia (see figure 22). Recently, WHO has prepared a new strategy which emphasizes inclusion of malaria control within primary health care, and calls for endemic countries to design appropriate local strategies, and to plan and implement affordable and sustainable interventions relevant to their situation. It considers that this can only be achieved by optimizing the use of health services resources and by mobilizing intersectoral co-operation and, even more important, the participation of the affected community itself to whatever extent this is possible.

287. Community participation must include teaching the rural community—especially in Africa, where the level of mortality can only be estimated—the importance of reporting malaria cases as they occur, and deaths due to malaria particularly in the endemic areas (see figure 23). The strategy also recognizes that the malaria problem must be addressed in a broader way than through the simple application of a standard technological solution. Sustained progress can only be achieved when anti-malaria activities adapted to each country's particular ecological situation are incorporated in the process of health and socio-economic development.

The International Register of Potentially Toxic Chemicals (IRPTC) (Budget subline 7102)

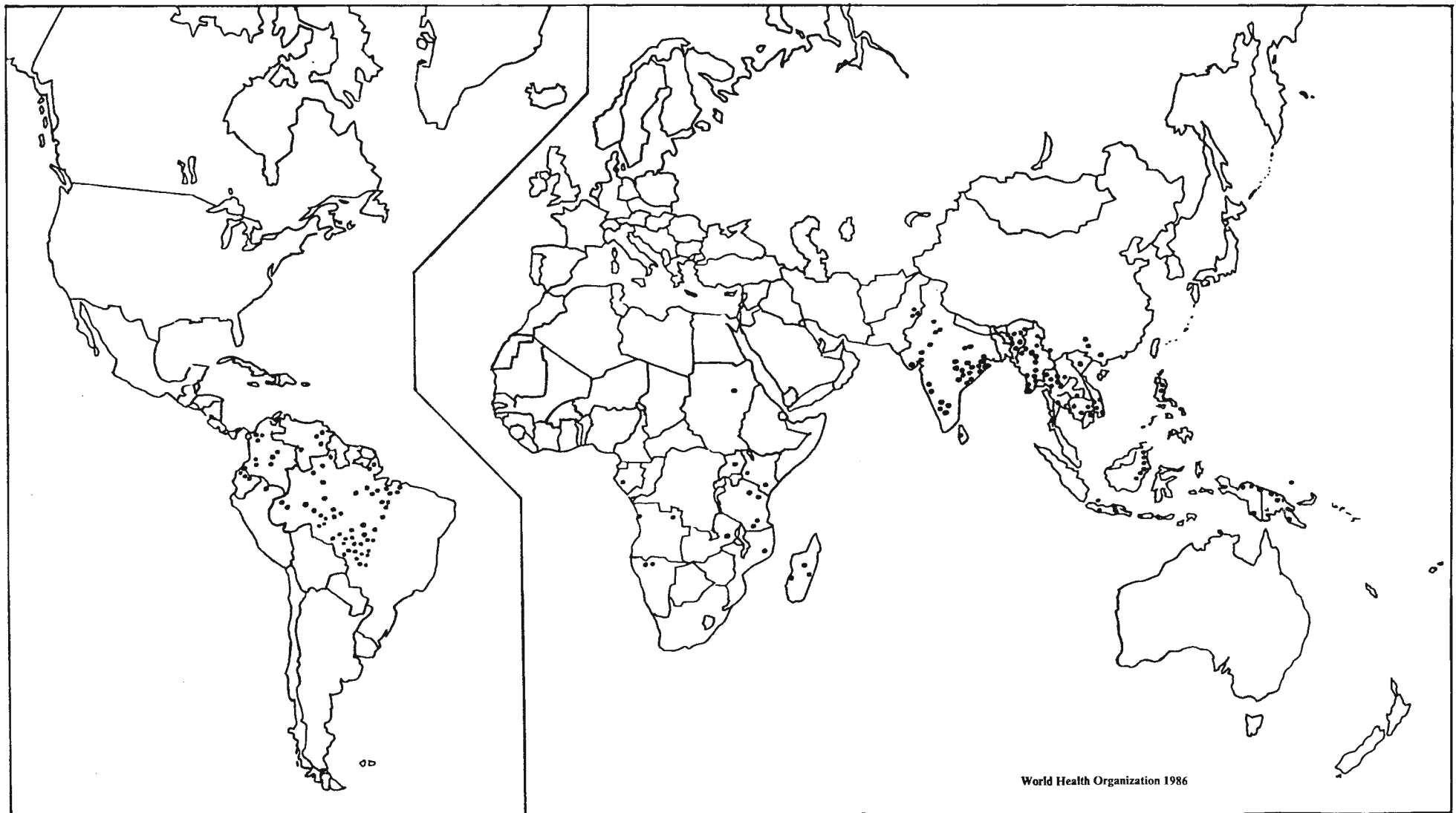
288. IRPTC continued with its regular functions as described in the *1985 Annual Report*, and embarked on a number of new activities during 1986.

289. The IRPTC computerized data files, now covering some 550 chemicals of international significance, including pesticides, solvents and flame retardants, continued to expand. Special attention was paid to those chemicals widely used in developing countries and those to which large sectors of the human population are believed to be exposed. A data profile readers' manual was prepared to assist users further in the optimal use of data contained in IRPTC files. The practical applicability of the manual is currently being scrutinized by network partners. Technical work with network partners continued to make the IRPTC data base available for use on small computers. In 1986, IRPTC also updated and completed its Legal File, which now contains data on national and international regulatory measures and recommendations for hazard control on 6,016 chemicals. Data from this file relating to the substances on the IRPTC working list of chemicals (563 chemicals) will be published in early 1987.

290. In 1986, the Query-response Service continued to receive queries on chemicals from developed and developing countries (see figure 24 and table 3). While 335 queries were received during 1985, 315 were received in 1986 (49 per cent from developing countries), some of them referring to more than 10 chemicals at a time. The major interest continued to lie in agrochemicals, which accounted for 48 per cent of the queries. Approximately 28 per cent of the queries related to regulatory measures and national and international recommendations for control of hazards from specific chemicals. IRPTC continued to undertake answering queries which had been received by IPSC and INFOTERRA, for which the Register functions as a special sectoral source of information.

291. During 1986 four new countries appointed national correspondents to IRPTC. The number now stands at 115 national correspondents from 108 countries with the following regional distribution:

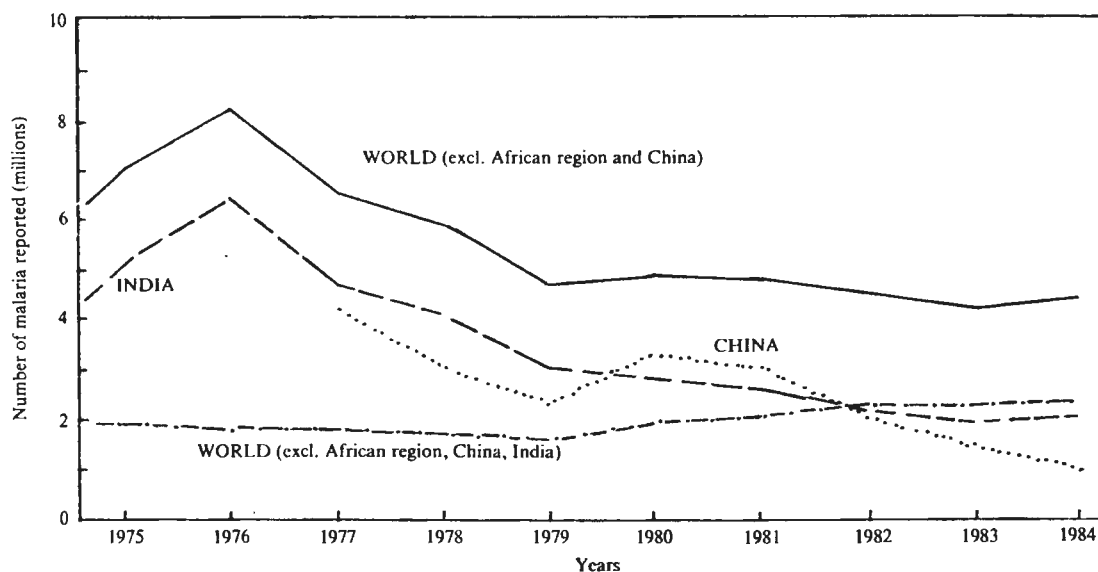
Figure 22.
Areas where resistance of *plasmodium falciparum* to chloroquine has been reported, 1984^a



Source: *World Health Statistics Quarterly*, No. 39 (1986).

^a In a few instances this map also contains information relating to 1985. Dans certains cas, cette carte contient également des renseignements se rapportant à 1985.

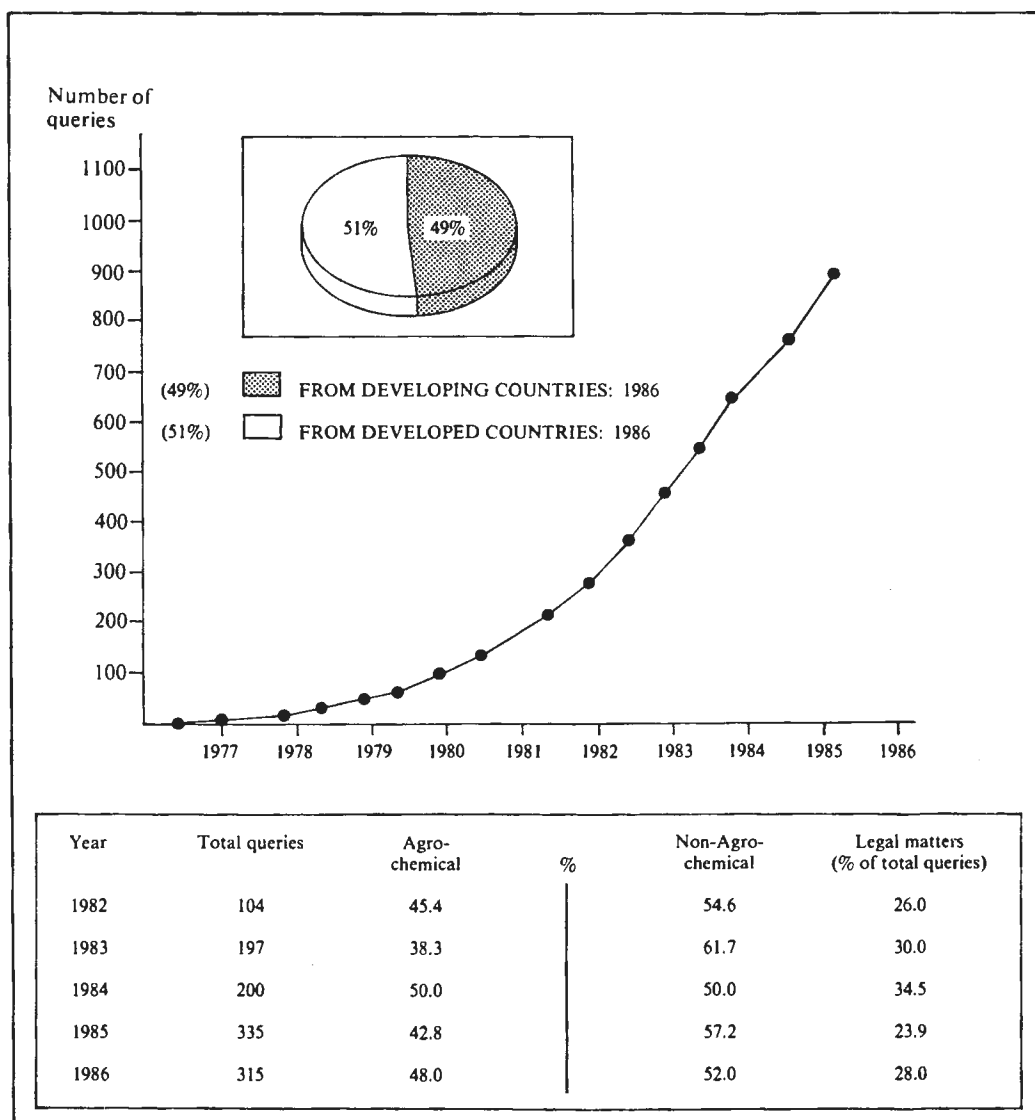
Figure 23.
Number of malaria cases reported, 1975-1984



Source: *World Health Statistics Quarterly*, No. 39 (1986).

	Number of countries	Number of national correspondents
Africa	26	28
Asia and the Pacific	21	23
Europe and North America	29	31
Latin America and the Caribbean	22	23
Western Asia	10	10
Total	108	115

Figure 24
Cumulative Total of queries received by IRPTC
(1976—1986)



292. IRPTC operates through this network of national correspondents, whose tasks include: distributing IRPTC publications; reporting to IRPTC on information they need regarding chemicals and their health and environmental hazards; providing national reports and critical reviews on chemicals, as well as information on national regulatory measures for chemical hazard control; and promoting knowledge about IRPTC activities in their respective countries.

293. One issue of the *IRPTC Bulletin* was published in 1986 in English, French and Spanish, and distributed to approximately 9,200 corporate and individual addresses worldwide, and work on a second was initiated.

294. In co-operation with the Government of the USSR, IRPTC continued the preparation and publication in English and Russian of the series of "Scientific reviews of Soviet literature on toxicity and hazards of chemicals", which now comprises 103 publications. Reviews on nine more chemicals are currently being prepared and will be submitted for publication in 1987, and at the same time the data are stored in the computerized data files.

295. In 1986 IRPTC, IPCS and the CMEA organized a second training seminar on "Methodology of optimal use of internationally prepared health risk evaluations and other relevant documents in activities aimed at the protection of human health and the environment" in Moscow and Sochi for 20 participants, mainly from developing countries. An international expert meeting held in Moscow in 1986 discussed an updated version of the English/Russian glossary of selected terms in preventive toxicology and made recommendations for its finalization and publication in 1987.

296. An international survey on the use of classification systems for chemicals based on their toxicity and hazards was initiated by IRPTC within the joint project with the Government of the USSR. As of 31 December 1986, 42 respondents from 38 countries had provided detailed information to IRPTC on national experience with such systems. The survey will be completed in 1987.

297. In 1986, under the Clearing-house and with the financial assistance of the Government of the Netherlands, IRPTC launched the second phase of a project to assist selected developing countries in the establishment of national information systems for chemicals. In 1986 Brazil, China, Indonesia, Thailand and Zambia were involved in the exercise, which culminated in a three-week training course held in October at IRPTC in Geneva.

298. In response to UNEP Governing Council decision 12/11, IRPTC continued to receive comments from Governments, international organizations, industry and NGOs in relation to the list of environmentally dangerous chemical substances and processes of global significance. An updated list based on comments received has been prepared with the aid of other UNEP units, IPCS and expert consultants, and was submitted to an expert group for scrutiny in December 1986.⁹

Table 3
Queries received by IRPTC, 1976-1986

Year	Yearly total	Cumulative total
1976	11	11
1977	11	22
1978	19	41
1979	34	75
1980	46	121
1981	69	190
1982	105	295
1983	197	492
1984	201	693
1985	335	1 028
1986	315	1 343

299. As of 1 December 1986, 64 countries had designated national authorities for participation in the implementation of the Provisional Notification Scheme for Banned and Severely Restricted Chemicals. IRPTC also received notifications of control action from 15 countries. IRPTC processed all information included in these control actions and disseminated it to designated authorities. The third session of the *Ad hoc* Working Group of Experts for the Exchange of Information on Potentially Harmful Chemicals (in particular Pesticides) in International Trade will be held in London in February 1987. IRPTC, assisted by a small advisory panel, has prepared a report on the experience of Governments in implementing the Provisional Notification Scheme for discussion by the *Ad hoc* Working Group.

300. IRPTC participated in the preparation of an updated version of the UN Consolidated List of Products whose Consumption and/or Sale have been Banned, Withdrawn, Severely Restricted or, in the case of Pharmaceuticals, not Approved by Governments, which will be widely distributed to Governments and others during early 1987. IRPTC also participated in the preparation of two reports of the Secretary-General related to the Consolidated List which were submitted to the Economic and Social Council and the General Assembly during 1986. Close contacts are maintained with the UN Secretariat, WHO and other international organizations to co-operate in this endeavour and to avoid duplication of work.

301. During 1986 IRPTC co-operated with the UNEP Industry and Environment Office in providing inputs for the UNEP/WHO/World Bank Manual on Disposal of Hazardous Wastes, with special emphasis on the problems and needs of developing countries. IRPTC also continued to provide inputs for the quarterly review *Industry and Environment*, and provided assistance to the Office in answering queries on chemicals.

302. Throughout 1986 IRPTC continued to participate actively in IPCS through the collection, selection and evaluation of data on chemicals for inclusion in the Environmental Health Criteria publication series and similar reports. A registry of chemicals currently being tested for toxic effects, which was developed jointly by IRPTC and IPCS (*1985 Annual Report*, chap. IV, para. 296), was published in April 1986. An updated version will be published in 1987.

303. The first phase of a joint study with the Commission of the European Communities on the identification and description of substances to which workers are exposed at the workplace and which are easily absorbed through the skin (*1985 Annual Report*, chap. IV, para. 298) was completed using data entered in the IRPTC Legal File on the regulatory position of countries vis-a-vis the relative importance of the skin absorption parameter in establishing occupational limits. The study continues with an expanded list of chemicals and in the light of new data recently obtained by IRPTC.

304. IRPTC continued to co-operate with OECD in a pilot project to improve access to unpublished information on chemicals, and consulted closely with the OECD secretariat with regard to the exchange of information on the export of banned and severely restricted chemicals.

Working environment (Budget subline 7103)

305. During 1986, for various reasons, the proposed joint ILO/WHO/UNEP project on organizational patterns and institutional arrangements for occupational health and safety at the national level was implemented by ILO and WHO without UNEP involvement or support.

Notes

1. The initial stages of the evaluation exercise were described in the *1985 Annual Report* (chap. I, paras. 2-7).
2. Sample summary fact sheets used in the evaluation exercise are contained in the Executive Director's *Evaluation Report 1986*.
3. The report is being submitted to the Council at its fourteenth session in document UNEP/GC.14/4/Add.4.
4. It has been decided that, starting from 1 January 1987, the sublines "Integrated approach to environment and development" and "Integration of environment in developing planning and activities" will be merged.
5. The Executive Director will be submitting to the Governing Council a separate policy paper on "Environment and financial institutions" (UNEP/GC.14/4/Add.5).
6. See document UNEP/GC.14/18 for a report on this subject.
7. A synopsis of the replies received on the subjects of shared natural resources and offshore mining and drilling is contained in document UNEP/GC.14/25.
8. A special report on national state-of-the-environment reports is being submitted to the Governing Council at its fourteenth session in document UNEP/GC.14/11.
9. This list will be submitted to the Governing Council at its fourteenth session in document UNEP/GC.14/19.
10. A joint report of the Executive Director of UNEP and UNCHS (Habitat) on co-operation between the two secretariats is being submitted to the Governing Council in document UNEP/GC.14/7.

Chapter V

**THE SECRETARIAT, ITS ORGANIZATION
AND PERSONNEL**

The Secretariat of UNEP

Organization

Recruitment and personnel

THE SECRETARIAT, ITS ORGANIZATION AND PERSONNEL

The secretariat of UNEP

1. In 1986 as in previous years, the secretariat was financed mainly from two sources, the United Nations regular budget and voluntary contributions to the Environment Fund. The Environment Fund finances the programme and programme support costs (PPSC) budget as well as projects. There are also a few posts and other costs financed through trust funds, including a special account created to administer trust funds, and other funds provided as counterpart contributions for specific projects.

2. The secretariat comprises staff in the Professional and General Service categories. The Professional posts approved and occupied on 31 December 1986 are shown in table 1 with the corresponding figures for 1985.

Table 1
Source of financing of Professional posts

	Number of posts			
	1985 Approved	1985 Occupied	1986 Approved	1986 Occupied
Regular budget	49 ^a	44 ^b	51 ^a	42 ^a
Programme and programme support costs	103 ^c	71 ^c	101 ^c	75
JPO ^d agreements (trust funds)	5	5	8	8
Special account for support to trust funds	7	4	7	4
Environment Fund projects	50	37	50	39
Trust fund projects	13	11	13	10
Activities financed from counterpart contributions	2	1	3	3
Total	229	173^e	233	181

^a Including 5 Field Service posts in the Cable Unit serving all the organizations in the United Nations office at Nairobi.

b Including 4 Field Service posts in the Cable Unit serving all the organizations in the United Nations office at Nairobi.

c Including one post lent to UNCHS.

d Junior Professional Officers. The figures include one senior Professional recruited under similar arrangements.

e Excluding two short-term Professionals charged to temporary assistance funds.

3. The distinction established at Stockholm between the small core secretariat financed out of the regular budget and programme support financed from the Environment Fund has become difficult to uphold in practice. Staff members serving with UNEP have a contract of service either with UNEP or with the United Nations. Their functions mostly involve duties covering the broad mandate of UNEP, and cannot easily be separated into those which are related to programme activities and those which are not. However, a broad picture of the distribution of functions among the 181 Professional staff occupying posts on 31 December 1986 is given in table 2.

Table 2
Distribution of Professional staff by function and source of funding

	Regular budget	PPSC	JPO ^a trust funds	SASTF ^a	Fund projects	Other projects	Total
Senior management	3	1	—	—	—	—	4
Regional and liaison Offices and external relations	5	15	—	—	1	—	21
Development of programmes	11	21	6	1	7	4	50
Project staff	—	—	1	—	22	8	31
Fund management and clearing-house	1	13	—	3	2	1	20
Information	1	6	1	—	5	—	13
Conference services	8	5	—	—	1	—	14
Administration	13	14	—	—	1	—	28
Total	42	75	8	4	39	13	181

a Junior Professional Officer.

b Special account for support to trust funds.

4. Table 2 illustrates the Executive Director's contention that the Environment Fund continues to carry a disproportionate share of secretariat staffing costs: a number of staff whose functions should logically fall under the regular budget are still financed from the Fund. The Executive Director has continued to remind UN Headquarters in New York of this fact and, in his budget submission for 1988-1989, has requested that one additional professional post should be financed by the regular budget.

5. As at 31 December 1986, 22 per cent of approved Professional posts were vacant, a somewhat lower percentage than a year earlier, since a number of Professional vacancies were filled by recruitment just before the end of 1986. The suspension of all recruitment on posts charged to the regular budget imposed in March 1986 by the Secretary-General because of the financial crisis facing the United Nations resulted in a further decrease in the occupancy of these posts, hence the higher rate of vacancy of regular budget posts than a year earlier. On the other hand, the proportion of vacancies at the end of the year in respect of PPSC posts, at 26 per cent, was lower than a year earlier (31 per cent). Nevertheless, 18 PPSC posts remained frozen during the year, and recruitment for other PPSC posts has been managed by the Executive Director with the utmost restraint in order to retain an average vacancy rate for PPSC posts above 20 per cent.

6. The overall increase of eight posts occupied includes an increase of five in the number of Professional officers funded by individual Governments through trust fund or counterpart funding arrangements.

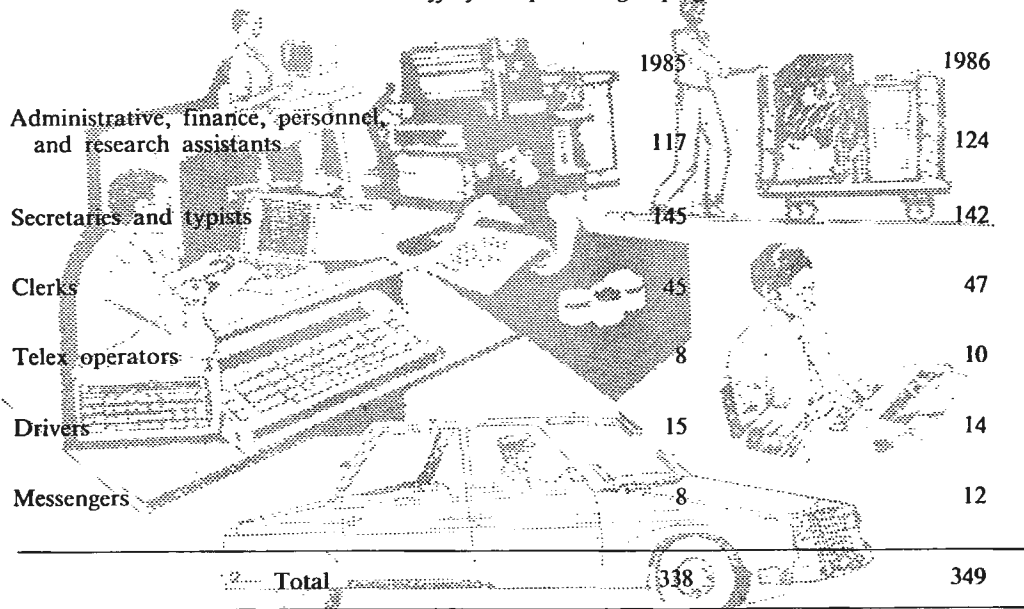
7. The General Service category contains 366 posts, of which 349 were occupied as at 31 December 1986 compared with 338 a year earlier. The financing of these posts is shown in table 3.

Table 3
Source of financing of General Service posts^a

	Number of posts			
	1985 Approved	1985 Occupied ^a	1986 Approved	1986 Occupied ^a
Regular budget	60	59	60	57
Programme and programme support costs	206	198	211	203
Special account for support to trust	8	8	10	10
Environment Fund projects	71	57	67	61
Trust fund projects	14	14	14	14
Activities financed from counterpart contributions	2	2	4	4
Total	361	338	366	349

^a These figures do not include a further 29 General Service staff members employed against temporary assistance funds, 11 financed by the regular budget, 7 from programme and programme support costs and 11 from trust funds etc. for 1985; nor do they include 30 General Service staff members employed against temporary assistance funds, 8 financed by the regular budget, 9 from programme and programme support costs and 13 from trust funds etc. for 1986.

Table 4
Service staff by occupational grouping



	1985	1986
Administrative, finance, personnel, and research assistants	117	124
Secretaries and typists	145	142
Clerks	45	47
Telex operators	8	10
Drivers	15	14
Messengers	8	12
Total	338	349

8. The General Service posts by classification of approved broad occupational grouping is shown in table 4.

9. The strengthening of the numbers of senior General Service staff evidenced by the increase in the first category is designed to assist the Professional staff to maintain the level of programmes while the vacancy rate amongst Professionals is over 20 per cent.

ORGANIZATION

10. As foreshadowed in the *1985 Annual Report*, the Office of the Environment Programme was reorganized in 1986. Following the detailed review of programme activities undertaken at the beginning of the year (see above, chap. IV, paras. 2-5), the Office was tentatively organized into nine units each with a critical mass of staff and sufficient administrative flexibility to enable it to function as an efficient inter-disciplinary team. Whereas previously the Office of the Programme was so structured that one Professional was responsible for one budget line, the new units are designed to enable a number of Professionals to work together to develop a group of interrelated subprogrammes.

11. Each of the three elements of the Stockholm Plan of Action—environmental assessments (Earthwatch), environmental management and supporting measures—now has a co-ordinator to ensure the functioning of each element as an integrated whole and the integration of assessment, management and support activities into a multisectoral and multidisciplinary approach to problem-solving.

12. Earthwatch was consolidated to include the following elements:

- (a) GEMS, which in addition to monitoring, is now responsible for assessment and research, atmosphere, environmental data and GRID.
- (b) IRPTC, with responsibility for UNEP's participation in IPCS;
- (c) INFOTERRA.

13. Environmental management activities were regrouped in the following units:
 - (a) Oceans and Coastal Areas Programme Activity Centre;
 - (b) Desertification Control Programme Activity Centre;
 - (c) Industry and Environment Office;
 - (d) Technology and Environment Branch, responsible for the energy, human settlements and natural disasters subprogrammes.
 - (e) Terrestrial Ecosystems Branch, responsible for the subprogrammes relating to water, soils, forests, other ecosystems, wildlife, genetic resources, bioproductivity, lithosphere, environmental health, agricultural chemicals and the arms race and the environment.
14. Supporting measures now comprise:
 - (a) Environmental education and training;
 - (b) Environmental law and machinery;
 - (c) Development planning and co-operation;
 - (d) Information;
 - (e) Technical co-operation.

The first three components are dealt with by the Support Branch in the Office of the Environment Programme; the Information Service is part of the Office of the Deputy Executive Director since its activities embrace the whole organization, and not only the Office of the Programme; while technical co-operation forms a part of activities under every budget line.

15. The Office of the Programme enjoys close day-to-day co-operation with the State-of-the environment Unit and the Follow-up and Evaluation Section in the Office of the Executive Director as well as the various units in the Office of the Deputy Executive Director, particularly the Information Service and the Clearing-house.

16. The Office of the Executive Director has also been reorganized. The Executive Director, apart from being in overall charge of the Programme, directly supervises the Cabinet Office, including the External Relations and Protocol Office and the Follow-up and Evaluation Section. The Deputy Executive Director, in addition to deputizing for the Executive Director in his absence, supervises the Information Service, the Clearing-house, the Conferences and Governing Council Service and the regional and liaison offices.

17. An organizational chart of the UNEP Secretariat appears at the end of the present chapter.

18. As at 31 December 1986, 76 per cent of the Professional staff and 78 per cent of the General Service staff were stationed at UNEP headquarters in Nairobi, as shown in table 5.

Table 5
UNEP Professional and General Service staff by duty station

Duty station	Professionals	General Service
Nairobi headquarters	138	273 ^a
Geneva (Regional Office, IRPTC, GRID)	10	20
Lausanne (Secretariat of the Convention on International Trade in Endangered Species)	6	5
Paris (Industry and Environment Office)	5	6
Athens (Mediterranean Co-ordination Unit)	4	11
Bangkok (Regional Office)	3	6
Mexico (Regional Office)	3	9
New York (Liaison Office)	3	7
Bahrain (Regional Office)	2	5
Peru (Project office)	2	—
Vienna (UNSCEAR)	1	2
Washington (Liaison Office)	1	1
Bonn (Secretariat of the Convention on Migratory Species)	1	1
Kingston (Caribbean Co-ordination Unit)	1	2
Democratic Yemen (Project office)	1	—
	181	349 ^a

a Excluding 30 General Service staff employed in Nairobi against temporary assistance funds.

19. Of the 934 United Nations staff members occupying the United Nations Office at Nairobi on 31 December 1986, 438 were UNEP staff members, 47 per cent of the total.

RECRUITMENT AND PERSONNEL

20. An analysis by nationality and region of the 181 Professional staff members occupying posts in UNEP as at 31 December 1986 appears in annex II. As in the past, the Executive Director has endeavoured to maintain overall geographical balance among staff in posts funded both from the UN regular budget and from the Environment Fund, in accordance with the relevant General Assembly resolutions. The regional breakdown of Professional staff and the change over the last year is shown in table 6.

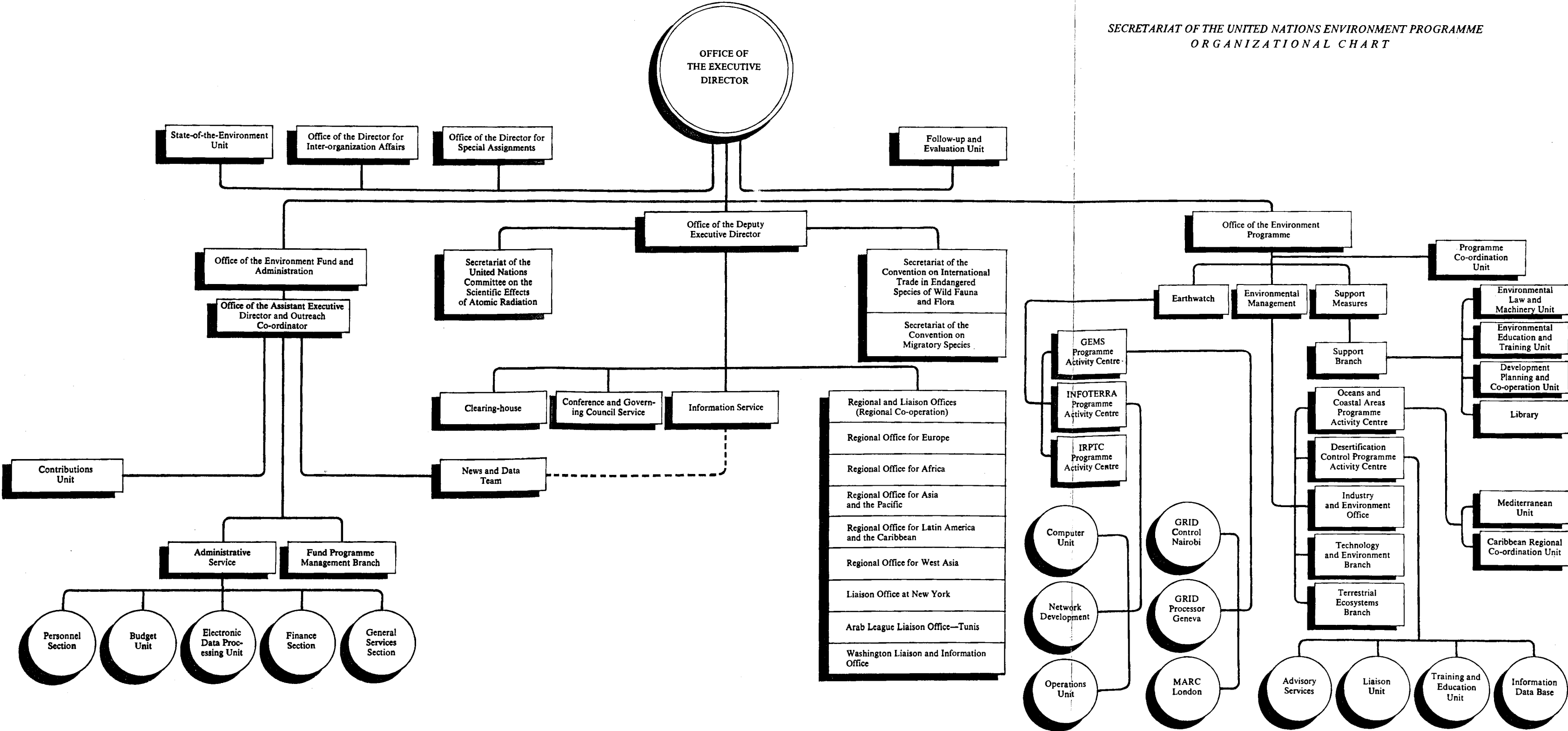
Table 6
Breakdown of Professional staff by Region
(Percentages)

	1985	1986
Africa	20.9	20.4
Latin America and the Caribbean	9.3	11.6
Western Europe and Others	43.0	41.4
Eastern Europe	9.3	8.8
Asia and the Pacific	17.4	17.7
	100.0	100.0

21. Twenty-three professionals left UNEP in 1986, four were transferred or reassigned elsewhere within the United Nations, two retired, five resigned, one post was abolished and one contract was not renewed. Ten staff members departed at the end of short-term assignments. New recruitments totalled 31 in 1986.

22. The percentage of women in Professional posts was maintained at 20 per cent during 1986.

SECRETARIAT OF THE UNITED NATIONS ENVIRONMENT PROGRAMME
ORGANIZATIONAL CHART



Annex I

MEMBER STATES OF THE UNEP GOVERNING COUNCIL

A. Member States during 1986

Algeria	Malta
Argentina	Mexico
Australia	Nepal
Austria	Netherlands
Barbados	Niger
Belgium	Nigeria
Botswana	Norway
Brazil	Oman
Bulgaria	Panama
Canada	Papua New Guinea
Chile	Poland
China	Rwanda
Colombia	Sri Lanka
Congo	Sudan
Czechoslovakia	Swaziland
Denmark	Syrian Arab Republic
France	Thailand
Germany, Federal Republic of	Togo
Ghana	Tunisia
Haiti	Turkey
India	Uganda
Indonesia	Ukrainian SSR
Jamaica	USSR
Japan	United Kingdom
Jordan	United States
Kenya	Venezuela
Kuwait	Yugoslavia
Libyan Arab Jamahiriya	Zaire
Malaysia	Zambia

B. Member States during 1987

Argentina	Malta
Australia	Mauritania
Barbados	Mexico
Botswana	Netherlands
Brazil	Niger
Bulgaria	Nigeria
Burundi	Oman
Canada	Panama
Chile	Papua New Guinea
China	Poland
Colombia	Republic of Korea
Congo	Senegal
Czechoslovakia	Sri Lanka
Denmark	Swaziland
Dominican Republic	Sweden
France	Switzerland
Gabon	Syrian Arab Republic
Germany, Federal Republic of	Thailand
Ghana	Tunisia
Greece	Turkey
India	Uganda
Indonesia	Ukrainian SSR
Iran (Islamic Republic of)	USSR
Iraq	United Kingdom
Jamaica	United States
Japan	Venezuela
Jordan	Yugoslavia
Kenya	Zaire
Libyan Arab Jamahiriya	Zambia

Annex II

DISTRIBUTION OF UNEP STAFF IN THE PROFESSIONAL CATEGORY AND ABOVE BY REGION, NATIONALITY AND LEVEL AS AT 31 DECEMBER 1986^a

Region and country of nationality	Occupied posts subject to geographical distribution	Number	Occupied posts not subject to geographical distribution ^b	Number	Total
<i>African States</i>					
Algeria	—	—	1 P-2	1	1
Benin	—	—	1 P-1	1	1
Egypt	1 USG, 1 P-5	2	2 P-4	2	4
Ethiopia	1 FS-3*	1	1 P-5	1	2
Gambia	—	—	1 P-4	1	1
Kenya	1 P-5, 1 D-2	2	3 P-3, 3 P-2	6	8
Libyan Arab Jamahiriya	1 D-1	1	1 P-4, 1 P-3	2	3
Mali	—	—	1 D-1	1	1
Mauritius	—	—	1 P-5	1	1
Morocco	—	—	1 P-3	1	1
Mozambique	—	—	1 P-3	1	1
Rwanda	—	—	1 P-4	1	1
Seychelles	—	—	1 D-1	1	1
Somalia	—	—	1 P-5	1	1
Sudan	—	—	1 D-2, 1 P-5, 1 P-3, 1 P-2	4	4
Swaziland	1 P-5	1	—	—	1
Tunisia	—	—	1 P-4	1	1
Uganda	—	—	1 P-4, 1 P-3	2	2
United Republic of Tanzania	—	—	1 P-2	1	1
Zimbabwe	—	—	1 P-2	1	1
Subtotal		7		30	37

^a The breakdown by region and country in the present annex does not correspond to that of the United Nations. As membership in the Governing Council is distributed among the five regions listed in General Assembly resolution 2997 (XXVII), it was decided to present this list in terms of the same regional groupings.

^b Including staff on Fund posts and all language staff.

* Field service staff.

Region and country of nationality	Occupied posts subject to geographical distribution	Number	Occupied posts not subject to geographical distribution ^b	Number	Total
<i>Asian States</i>					
Afghanistan	—	—	1 P-4	1	1
Bangladesh	—	—	1 D-2	1	1
Burma	—	—	1 D-1	1	1
China	1 P-3	1	1 D-1	1	2
Democratic Yemen	1 P-5	1	—	—	1
India	1 D-2	1	1 P-5, 2 P-4	3	4
Iran (Islamic Republic of)	—	—	1 P-4	1	1
Japan	1 P-2	1	1 D-1, 2 P-5, 5 P-2	8	9
Jordan	—	—	1 P-5	1	1
Lebanon	1 P-3	1	—	—	1
Nepal	—	—	1 P-2	1	1
Pakistan	1 P-5	1	1 P-3	1	2
Philippines	1 FS-5*	1	1 P-4	1	2
Sri Lanka	—	—	1 P-4	1	1
Syrian Arab Republic	—	—	1 L-5	1	1
Turkey	—	—	1 P-4	1	1
VietNam	—	—	1 P-2	1	1
Yemen	—	—	1 D-1	1	1
Subtotal		7		25	32
<i>Eastern European States</i>					
Czechoslovakia	—	—	1 P-4	1	1
Hungary	—	—	1 P-5, 1 P-3	2	2
Poland	1 P-4	1	—	—	1
USSR	1 ASG, 1 P-4	2	1 L-5, 4 P-4, 3 P-3	8	10
Yugoslavia	—	—	1 D-2, 1 P-5	2	2
Subtotal		3		13	16

Region and country of nationality	Occupied posts subject to geographical distribution	Number	Occupied posts not subject to geographical distribution ^a	Number	Total
<i>Western European and other States</i>					
Australia	—	—	1 D-1, 2 P-4, 1 P-3	4	4
Austria	—	—	1 P-4	1	1
Belgium	—	—	2 P-4	2	2
Canada	—	—	1 P-5	1	1
Denmark	1 P-3	1	1 P-4, 1 P-2	2	3
Finland	—	—	1 D-1, 1 P-5	2	2
France	2 P-4	2	1 D-2, 1 D-1, 1 P-5, 1 P-4, 2 P-3	6	8
German, Federal Republic of	1 P-5	1	1 ASG, 2 P-3, 3 P-2	6	7
Greece	1 P-5, 1 FS-5*	2	—	—	2
Iceland	—	—	1 P-4	1	1
Ireland	1 FS-5*	1	2 P-3	2	3
Italy	1 D-1	1	1 D-2, 2 P-4, 1 P-3	4	5
Netherlands	—	—	1 D-2, 1 P-3, 1 P-2	3	3
New Zealand	—	—	2 P-2	2	2
Norway	—	—	2 P-2	2	2
Spain	—	—	1 P-3	1	1
Sweden	1 P-4	1	1 P-4, 1 P-3, 1 P-2	3	4
Switzerland	—	—	1 P-4, 1 P-2	2	2
United Kingdom	1 P-5, 1 P-4, 1 P-2	3	1 D-2, 1 D-1, 1 P-4, 3 P-3	6	9
United States of America	1 ASG, 1 P-5, 1 P-3	3	1 D-1, 5 P-5, 3 P-3, 1 P-1	10	13
Subtotal		15		60	75

Region and country of nationality	Occupied posts subject to geographical distribution	Number	Occupied posts not subject to geographical distribution ^b	Number	Total
<i>Latin American States</i>					
Argentina	—	—	2 P-3	2	2
Brazil	1 D-2	1	—	—	1
Chile	1 FS-3*	1	2 P-5, 2 P-4	4	5
Colombia	—	—	1 P-3	1	1
Dominican Republic	—	—	1 P-3	1	1
Ecuador	—	—	1 P-2	1	1
Guyana	—	—	1 P-5	1	1
Haiti	1 P-2	1	—	—	1
Jamaica	1 D-2	1	3 P-2	3	4
Mexico	—	—	1 P-2	1	1
Peru	—	—	1 D-2, 1 P-5	2	2
Venezuela	—	—	1 P-5	1	1
Subtotal		4		17	21
Total		36		145	181

Abbreviations for Annexes III and IV

BP/RAC	Blue Plan/Regional Activity Centre
BMFT	Federal Ministry for Research and Technology (Federal Republic of Germany)
CAR/RCU	Caribbean Regional Co-ordination Unit
CEC	Commission of the European Communities
CPSP	Permanent Commission for the South Pacific
EIA	Environment Impact Assessment
EMG	Expert Meeting Group
ESA	European Space Agency
ESAMI	Eastern and Southern Africa Management Institute
EWG	Expert Working Group
GTZ	German Technical Co-operation (Federal Republic of Germany)
ICSEM	International Commission for the Scientific Exploration of the Mediterranean Sea
IDRAS	Institute of Desert Research Academic Studies (China)
ILMR	International Laboratory of Marine Radioactivity (IAEA)
IOCARIBE	Intergovernmental Oceanographic Commission Association for the Caribbean and Adjacent Regions
IPAGRO	Instituto de Pesquisas Agronomicas (Brazil)
IVIC	Instituto Venezolano de Investigaciones Scientificas
MAPPS	Malaysian Plant Protection Society
MEDU	Mediterranean Action Plan Unit (UNEP)
MRMC	National Resources Management Centre (Philippines)
OCA/PAC	Ocean and Coastal Zones Programme Activity Centre
PAP/RAC	Priority Action Programme/Regional Activity Centre
PEEM	WHO/FAO/UNEP Panel on Environmental Management for Vector and Disease Control
ROCC	Regional Oil Combatting Centre
SAC	Scientific Advisory Committee
SACEP	South Asia Co-operative Environment Programme
SPC	South Pacific Commission
SPREP	South Pacific Regional Environment Programme
TVE	Television Trust for the Environment
UFRGS	Universidade Federal do Rio Grande do Sul
US-EPA	United States Environment Protection Agency
WDC	World Data Centre on Micro-organisms (University of Queensland, Brisbane)

Annex III

PUBLICATIONS AND PAPERS ISSUED IN 1986

A. PRINTED PUBLICATIONS

Title	Produced by	Financed by	Languages
<i>Environment and development (Budget sublines 2101 and 2102)</i>			
None			
<i>Energy (Budget subline 2103)</i>			
None			
<i>Industry and transportation (Budget subline 2104)</i>			
The impact of water-based drilling mud discharges on the environment—an overview	UNEP	UNEP	E
Environmental aspects of alumina production—an overview	UNEP	UNEP	E
Environmental aspects of iron and steel production—a technical review	UNEP	UNEP	E
Guidelines for environmental management of iron and steel works	UNEP	UNEP	E
Guidelines on environmental management of aluminium smelters	UNEP	UNEP	E
Environmental aspects of transportation in cities: basic guidelines for an environmentally sound transportation system in urban areas	UNEP	UNEP	E
Environmental guidelines for the diesel vehicle	UNEP	UNEP	F
<i>Industry and Environment review:</i>			
Vol. 8 No. 4 "Food processing industry and the environment"	UNEP	UNEP	E
Vol. 9 No. 1 "Carrying capacity for tourism activities"	UNEP	UNEP	E
Vol. 9 No. 2 "Training in industrial environmental management"	UNEP	UNEP	E

Title	Produced by	Financed by	Languages
Vol. 9 No. 3 "Recycling and recovery in the metals industry"	UNEP	UNEP	E
Vol. 9 No. 4 "Low- and non-waste technologies for industrial environmental management"	UNEP	UNEP	E
<i>Environmental Law and environmental machinery (Budget subline 2105)</i>			
None			
<i>Environmental education and training (Budget sublines 3101 and 3102)</i>			
Connect, Vol. XI Nos. 1-4	UNESCO	UNEP/UNESCO	AEFRS
Ecosystem Management in Developing Countries (Dresden Course Papers 1977-1983)	UNEP	UNEP/UNESCO	E
Environmental Management training manuals:	ILO	UNEP/ILO	E
1. General Environmental Management			
2. Project Management and the Environment			
3. Production Management and the Environment			
<i>Public information (Budget subline 3103)</i>			
Six issues of UNEP News	UNEP	UNEP	EFS
Four issues of THE SIREN	UNEP	UNEP	EFS
Three posters "PEACE NATURALLY"	UNEP/Government of Hungary	UNEP/Government of Hungary	EFS
"A Tree for Peace" WED commemorative booklet (1986)	UNEP	UNEP	EFS
<i>INFOTERRA Budget subline 3104)</i>			
INFOTERRA International Directory of Sources and Index Supplement Volume E and Index A-E	UNEP	UNEP	EFRS
INFOTERRA Operations Manual	UNEP	UNEP	EFS

Title	Produced by	Financed by	Languages
INFOTERRA Specialized Directory on Wastes and Their Treatment	UNEP	UNEP	Multilingual edition
INFOTERRA Bulletin, Vol.VIII, Nos. 1-5	UNEP	UNEP	EFRS
INFOTERRA Information Sheet	UNEP	UNEP	EFRS
INFOTERRA Leaflet	UNEP	UNEP	EFS
INFOTERRA Video Presentation	UNEP	UNEP	EFRS
<i>Data and the state of the environment (Budget subline 3105)</i>			
The State of the Environment 1986: Environment and Health	UNEP	UNEP	ACEFRS
<i>Global Environmental Monitoring System (GEMS) (Budget subline 4101)</i>			
Monitoring Natural Waters for Drinking-Water Quality. (In: World Health Statistics, Vol. 39, No. 1, 1986)	UNEP	UNEP/WHO	EF
Laboratory Performance Evaluation Studies and their Relationship to the Global Environmental Monitoring System (GEMS). (In: World Health Statistics, Vol. 39, No. 1, 1986)	UNEP	UNEP/WHO	EF
Manual for BAPMoN Station Operators	WMO	UNEP/WMO	F
Practical Guide for Estimating Atmospheric Pollution Potential	WMO	UNEP/WMO	E
Air-Sea Interchange of Pollutants	WMO	UNEP/WMO	E
Summary Report on the Status of the WMO Background Air Pollution Monitoring Network as at 31 December 1985	WMO	UNEP/WMO	E
Impact of Atmospheric Pollution on Inland Waters	WMO	UNEP/WHO/ UNESCO/WMO	E

Title	Produced by	Financed by	Languages
Report of the Fourth Session of the Technical Advisory Committee of the Joint FAO/WHO Food Contamination Monitoring Programme	WHO	UNEP/WHO	E
World Climate Data Programme Climate System Monitoring (CSM) 1986 Issues 1-12	WMO	UNEP/WMO	E
Draft Manual on methodologies and criteria for harmonized sampling, assessment, monitoring and analysis of the effects of air pollution control	UNEP	UNEP	E
Sentinel Vol. 3 Nos. 1-3	MARC	UNEP/WHO	E
Biological Monitoring of Environmental Contaminants (Plants)	MARC	UNEP	E
Bronchocarcinogenic properties of welding and thermal spraying fumes containing chromium in the rat. (In: American Journal of Industrial Medicine)	MARC	UNEP	E
Monitoring of zinc protoporphyrin levels in blood following occupational lead exposure. (In: American Journal of Industrial Medicine)	MARC	UNEP	E
Effects on pregnancy outcome and the foetal brain at moderate lead exposure of monkeys. (In: Scandinavian Journal of Work, Environment and Health)	MARC	UNEP	E
The influence of continuous and intermittent traffic noise on sleep. (In: Journal of Sound Vibration)	MARC	UNEP	E
1986 IUCN Red List of Threatened Animals	IUCN	IUCN/WWF/UNEP	E
IUCN Cetacean Red Data Book	IUCN	UNEP	E
<i>Outer limits, research and assessment (Budget subline 4102)</i>			
Atmospheric Ozone (3 Volumes)	National Aeronautics and Space Administration UNEP/WMO/CEC/ NOAA/BMFT	National Aeronautics and Space Administration	E

Title	Produced by	Financed by	Languages
Effects of changes in Stratospheric Ozone and Global Climate (4 Volumes)	United States Environmental Protection Agency	UNEP and US EPA	E
Climate Impact Assessment SCOPE 27	SCOPE	UNEP and SCOPE	E
Atmospheric Greenhouse Gases and Changing Climate SCOPE 29	SCOPE	UNEP and SCOPE	E
1982-1983 Climate Anomalies The Lugano Report	National Centre for Atmospheric Research	UNEP	E
Climate Impact on Agriculture (2 Volumes)	International Institute for Applied Systems Analysis	UNEP/IIASA	E
Policy-oriented Assessment of Impact of Climate Variations	International Institute for Applied Systems Analysis	UNEP/IIASA	E
Parameterization of Land-surface Characteristics; use of satellite data in climate studies; first results of the International Satellite Land-surface Climatology Project	European Space Agency	UNEP/COSPAR/ESA	E
<i>Global marine environment (Budget subline 5101)</i>			
UNEP/WHO/IAEA: Determination of staphylococcus aureus in sea-water and sewage by the filtration culture method. Reference Methods for Marine Pollution Studies No. 28. UNEP 1986.	IAEA	UNEP/WHO/IAEA	E
UNEP/IAEA: Determination of total iron in marine sediments by flame atomic absorption spectrophotometry. (Draft) Reference Methods for Marine Pollution Studies No. 37. UNEP 1986	IAEA	UNEP/IAEA	E
UNEP/IAEA: Determination of total manganese in marine sediments by flame atomic absorption spectrophotometry. (Draft) Reference Methods for Marine Pollution Studies No. 38. UNEP 1986	IAEA	UNEP/IAEA	E

Title	Produced by	Financed by	Languages
UNEP/IAEA: Determination of total zinc in marine sediments by flame atomic absorption spectrophotometry. (Draft) Reference Methods for Marine Pollution Studies No. 39. UNEP 1986	IAEA	UNEP/IAEA	E
<i>Regional seas (Budget subline 5102)</i>			
UNEP: Long-term programme for pollution monitoring and research in the Mediterranean (MED POL) Phase II. UNEP Regional Seas Reports and Studies No. 28, Rev. 1. UNEP 1983	UNEP	UNEP	E
UNEP: Environmental problems of the marine and coastal area of Sri Lanka: National Report. UNEP Regional Seas Reports and Studies No. 74. UNEP 1986	UNEP	UNEP	E
UNEP: Environmental problems of the marine and coastal area of Bangladesh: National Report. UNEP Regional Seas Reports and Studies No. 75. UNEP 1986	UNEP	UNEP	E
UNEP: Environmental problems of the marine and coastal area of Maldives: National Report. UNEP Regional Seas Reports and Studies No. 76. UNEP 1986	UNEP	UNEP	E
UNEP: Environmental problems of the marine and coastal area of Pakistan: National Report. UNEP Regional Seas Reports and Studies No. 77. UNEP 1986	UNEP	UNEP	E
GESAMP: Organosilicons in the marine environment. UNEP Regional Seas Reports and Studies No. 78. UNEP 1986	GESAMP	UNEP	E
H.I.Shual: Thalassogenic diseases. UNEP Regional Seas Reports and Studies No. 79. UNEP 1986	UNEP	UNEP	E
GESAMP: Environmental capacity: an approach to marine pollution prevention. UNEP Regional Seas Reports and Studies No. 80. UNEP 1986	GESAMP	UNEP	E

Title	Produced by	Financed by	Languages
UNEP: Action Plan for the conservation of the marine environment and coastal areas of the Red Sea and Gulf of Aden. UNEP Regional Seas Reports and Studies No. 81. UNEP 1986	UNEP	UNEP	E
UNEP: Environmental problems of the South Asian Seas region: An overview. UNEP Regional Seas Reports and Studies No. 82. UNEP 1986	UNEP	UNEP	E
SPC/SPEC/ESCAP/UNEP: B. Wauthy: Physical ocean environment in the South Pacific Commission Area. UNEP Regional Seas Reports and Studies No. 83. UNEP 1986	SPC/SPEC/ESCAP/UNEP	UNEP	EF
UNEP: Environmental Impact Assessment in the United Arab Emirates. UNEP Regional Seas Reports and Studies No. 84. UNEP 1986	UNEP	UNEP	E
GESAMP: Arsenic/Mercury/Selenium. UNEP Regional Seas Reports and Studies No. 85. UNEP 1986	GESAMP	UNEP	E
FAO/UNESCO/IMO/IAEA/ESCWA/IUCN/UNEP: Coastal and marine environmental problems of Somalia. UNEP Regional Seas Reports and Studies No. 86. UNEP 1986		UNEP	E
<i>Mediterranean Action Plan</i>			
UNEP/IOC/WMO: Baseline studies and monitoring of oil and petroleum hydrocarbons in marine waters (MED POL I): Final reports of principal investigators. MAP Technical Reports No. 1. UNEP 1986	UNEP/IOC/FAO	UNEP	EFS
UNEP/FAO: Baseline studies and monitoring of metals, particularly mercury and cadmium, in marine organisms (MED POL II): Final reports of principal investigators. MAP Technical Reports No. 2. UNEP 1986	UNEP/FAO	UNEP	EFS

Title	Produced by	Financed by	Languages
UNEP/FAO: Baseline studies and monitoring of DDT, PCBs and other chlorinated hydrocarbons in marine organisms (MED POL III): Final reports of principal investigators. MAP Technical Reports No. 3. UNEP 1986	UNEP/FAO	UNEP	EFS
UNEP/FAO: Research on the effects of pollutants on marine organisms and their populations (MED POL IV): Final reports of principal investigators. MAP Technical Reports No. 4. UNEP 1986	UNEP/FAO	UNEP	EFS
UNEP/FAO: Research on the effects of pollutants on marine communities and ecosystems (MED POL V): Final reports of principal investigators. MAP Technical Reports No. 5. UNEP 1986	UNEP/FAO	UNEP	EF
UNEP/FAO: Problems of coastal transport of pollutants (MED POL VI): Final reports of principal investigators. MAP Technical Reports No. 6. UNEP 1986	UNEP/FAO	UNEP	E
<i>Living marine resources (Budget subline 5103)</i>			
None			
<i>Water (Budget line 52)</i>			
Monitoring to detect changes in water quality series	UNEP	UNEP/UNESCO/ IAHS	E
Conjunctive water use understanding and managing surface water-groundwater interactions	IAHS	UNEP/UNESCO/ IAHS	E
Environmental Impact Assessment of Water Resources projects. Post seminar volume	Water Resources Development Training Centre (India)	UNEP Government of India	E
Health Aspects of Waste-Water and Excreta Use in Agriculture	International Reference Centre for Waste	UNEP/ILO UNDP/ World Bank	E
<i>Soils (Budget subline 6101)</i>			
Farming Systems Principles for Improved Food Production and the Control of Soil Degradation in the Arid, Semi-arid, and Humid Tropics	ICRISAT/UNEP	UNEP	E

Title	Produced by	Financed by	Languages
<i>Tropical forests (Budget subline 6102)</i>			
None			
<i>Other ecosystems (Budget subline 6103)</i>			
None			
<i>Management of agricultural chemicals and residues (Budget subline 6104)</i>			
Control of protozoal diseases in Eastern Africa—The case for environmental considerations	The International Commission of Protozoology	UNEP	E
Environmental approach employing primary health care as a tool for the control of protozoal bacterial and helminthic diseases	The International Commission of Protozoology	UNEP	E
Proceedings of the Seventh International Congress on Entomology	The International Commission of Protozoology	UNEP/UNICEF/ WHO/various scientific institutions, donor agencies, etc.	E
<i>Wildlife and protected areas (Budget subline 6105)</i>			
Identification Manual for Endangered Species	UNEP/CITES CITES Parties	UNEP/CITES CITES Parties	E
Directory of CITES Management and Scientific Authorities	UNEP/CITES	CITES/UNEP	EFS
Bird Species of the World: A Taxonomic and Geographic Reference	CITES/UNEP Association of Systematic Collection	CITES/UNEP	E
A Directory of Crocodilian Farming Operations	UNEP/CITES/ IUCN	UNEP/CITES/ IUCN/ International Fur Trade Federation	EFS
Latin American Wildlife Trade Laws (2nd Edition)	UNEP/CITES	UNEP/CITES	E
Poster "Genus" Amazon	UNEP/CITES/ New York Zoo- logical Society	New York Zoological Society	E
Traffic Bulletin, Vol. VIII, Nos. 1-3	Wildlife Trade Monitoring Unit, UNEP/CITES	UNEP/CITES/ TRAFFIC USA/ People's Trust for Endangered Species	E

Title	Produced by	Financed by	Languages
IUCN Species Survival Commission Newsletter	IUCN	IUCN/WWF/UNEP	E
Action Plan for African Primate Conservation 1986-1990	IUCN/UNEP	UNEP/IUCN/WWF	E
<i>Genetic resources (Budget subline 6106)</i>			
Proceedings of the Workshop on Rhizobium/Legume Inoculants	Porto Alegre MIRCEN	UNEP/IPAGRO/UFRGS	E
World Directory of Collections of Cultures of Microorganisms	World Data Centre on Microorganisms (WDC), Brisbane	UNEP/WDC/UNESCO	E
World Rhizobium Catalogue	WDC	UNEP/WDC/UNESCO	E
Animal Genetic Resources Information No.5/86	FAO	FAO/UNEP	E
Nairobi MIRCEN Newsletter Vol.9 (2)	Nairobi MIRCEN	Nairobi MIRCEN/UNEP	E
La Revue du MIRCEN de l'Afrique de l'Ouest Vol.3 (1)	Dakar MIRCEN	Dakar MIRCEN/UNEP/UNESCO	F
Cairo MIRCEN Newsletter	Cairo MIRCEN	Cairo MIRCEN/UNEP	E
<i>Arid and semi-arid lands ecosystems and desertification (Budget line 62)</i>			
Arid Land Development and Combating Desertification: Integrated approach	UNEP/UNEP/COM	UNEP	ER
Principes et méthodes de Fixation des sables mouvants	UNEP/UNEP/COM	UNEP	EFR
Proceedings of the training Course Rainfed Agriculture and Soil Conservation in Dry Zones	UNEP/UNEP/COM	UNEP	EFR
Desertification Control Bulletin, No.13	UNEP	UNEP	E
Annotated Directory of Organizations Dealing with Desertification Control and Dryland Development	UNEP	UNEP	E
Assessment of Water Resources in Arid and Semi-arid Regions	UNEP	UNEP	E

Title	Produced by	Financed by	Languages
<i>Environmental Health (Budget subline 7101)</i>			
Environmental Health Criteria No.51—Guide to Short-Term Tests for Detecting Mutagenic and Carcinogenic Chemicals (ICPEMC)	WHO	UNEP/ILO/WHO	E
Environmental Health Criteria No.52—Toluene	WHO	UNEP/ILO/WHO	E
Environmental Health Criteria No.53—Asbestos and Other Natural Mineral Fibres	WHO	UNEP/ILO/WHO	E
Environmental Health Criteria No.54—Ammonia	WHO	UNEP/ILO/WHO	E
Environmental Health Criteria No.55—Ethylene Oxide	WHO	UNEP/ILO/WHO	E
Environmental Health Criteria No.56—Propylene Oxide	WHO	UNEP/ILO/WHO	E
Evaluation of Short-term tests for Carcinogens: A report of the IPCS's Collaboration Study on in vitro assays	WHO	UNEP/ILO/WHO	E
<i>International Register of Potentially Toxic Chemicals (IRPTC) (Budget subline 7102)</i>			
IRPTC Bulletin vol. 7, no. 4	UNEP	UNEP	E
Sentinel, vol. 2, no. 3	MARC/UNEP/WHO	UNEP/WHO	E
Sentinel, vol. 3, nos. 1 and 2	MARC/UNEP/WHO	UNEP/WHO	E
Data profiles for 550 chemicals (completion/updating)	UNEP	UNEP	E
Scientific reviews of Soviet literature on toxicity and hazards of chemicals (nos. 95-103)	Government of the USSR/UNEP	UNEP	ER
Toxicometry of Environmental Chemical Pollutants (a monograph)	Government of the USSR/UNEP	UNEP	ER
Collection of training materials of the joint CMEA/IRPTC/IPCS Training Seminar on Methodology of Optimal Use of Internationally-prepared Health Risk Evaluations and Other Relevant Documents in the Activities Aimed at the Protection of Human Health and the Environment (Moscow, 1984)	Government of the USSR/UNEP	UNEP	ER

Title	Produced by	Financed by	Languages
Problems of Industrial Toxicology (a reference book)	Government of the USSR/UNEP	UNEP	ER
Long-term Effects of Chemicals on the Organism	Government of the USSR/UNEP	UNEP	E
IRPTC Brochure	Government of the USSR/UNEP	UNEP	R
IRPTC Bulletin vol. 7, nos. 1-2	Government of the USSR/UNEP	UNEP	R
<i>Working Environment (Budget subline 7103)</i>			
None			
<i>Human settlements (Budget subline 7104)</i>			
Proceedings of the International Symposium on Solid Waste for Developing Countries	UNEP	UNEP	E
Synopsis of developing countries monographs on Community-based methodology to identify the needs, priorities and actions in upgrading Environmental Health conditions in low-income settlements; Community-based actions in assessment and meeting the Environmental Health needs of children; Health related criteria for the lighting Environment; Health related criteria for noise control	UNEP/WHO	UNEP	E
<i>The Arms Race and the Environment (Budget line 81)</i>			
Disarmament, Environment and Sustainable Development (A time for action)	UNEP	UNEP	E
Global Resources and International Conflict	UNEP/SIPRI	UNEP/SIPRI	E
<i>Regional and Technical Co-operation (Budget line 82)</i>			
None			

B. MAJOR STUDIES, PAPERS AND REPORTS

Title	Produced by	Financed by	Languages
<i>Environment and Development (Budget sublines 2101 and 2102)</i>			
Socio-economic Evaluation of Natural Resources Use and Conservation in Planned Economies: Methodologies, Case Studies and Guidelines	UNEP/COM	UNEP	ER
Environmental Planning and Management (EPM) for Socio-Economic Development in Cyprus: Participant Manual	IDE	UNEP	E
Environmental Planning and Management (EPM) for Socio-Economic Development in Cyprus: Workshop and Report	IDE	UNEP	E
Report of the Third Joint Workshop of UNEP and World Bank on Environmental Accounting	World Bank	UNEP	E
Synthesis Report of the International Conference on Application of Economics to Dryland Degradation and Rehabilitation	Government of Australia	UNEP/Common-Wealth Secretariat/ Government of Australia	E
Report of the Ad Hoc Expert Group Meeting on Integration of Environmental Considerations in Development Planning	UNEP	UNEP	E
Action and Interaction on Environmental Matters: The History and Potential of CIDIE	UNEP	UNEP	E
Summary Record of the Seventh Session of the Committee of International Development Institutions on the Environment 22-26 May 1986	UNEP	UNEP	E
Comprehensive Development strategies: the Role of UNDP in Environmental Management	UNDP	UNEP	E
Procedural Guidelines of UNDP in Environmental Management	UNDP	UNEP	E

Title	Produced by	Financed by	Languages
<i>Energy</i> (Budget subline 2103)			
The Environmental Impacts of Production and Use of Energy—Part IV, Phase III —Assessment of Tools and Methods for Incorporating the Environmental Factor into Energy Planning and Decision Making, ERS-17-86	Technical Research Center Finland	UNEP/Technical Research Center, Finland	E
Energy Conservation in Developing Countries, ERS-16-86	UNEP	UNEP	E
“International Co-operation Towards the Resolution of the Environmental Impacts of Nuclear Energy”, Contribution by UNEP to the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy	UNEP	UNEP	E
<i>Industry and transportation</i> (Budget subline 2104)			
None			
<i>Environmental Law and its application</i> (Budget subline 2105)			
Report of the First Part of the Workshop on the Control of Chlorofluorocarbons (UNEP/WG. 148/2, 12 July 1986)	UNEP	UNEP	E
Report of the Second Part of the Workshop on the Control of Chlorofluorocarbons (UNEP/WG.148/3, 15 July 1986)	UNEP	UNEP	E
Fifth Revised Draft Protocol on Chlorofluorocarbons (UNEP/WG.151/2, 26 September 1986)	UNEP	UNEP	AEFRS
Draft Revised Principles and Guidelines on Environmental Impact Assessment (UNEP/WG.152/2, 16 October 1986)	UNEP	UNEP	AEFRS
Survey of the EIA-Related Activities of Various International Organizations (UNEP/WG.152/3, 16 October 1986)	UNEP	UNEP	AEFRS

Title	Produced by	Financed by	Languages
Addendum to the Survey of the EIA-Related Activities of Various International Organizations (UNEP/WG.152/3, 6 December 1986)	UNEP	UNEP	AEFRS
Second Revised Draft Guidelines for the Exchange of Information on Potentially Harmful Chemicals in International Trade, and comments by member nations, UN organizations, and Non-governmental organizations (UNEP/WG.112/6, 27 January 1986 and UNEP/WG.155/2, 12 November 1986)	UNEP	UNEP	AEFRS
Addendum to the Survey of National Notification Procedures and Legislative Definitions (Potentially Harmful Chemicals) (UNEP/WG.155/3, 12 December 1986)	UNEP	UNEP	AEFRS
Implementation of the Provisional Notification Scheme for Banned and Severely Restricted Chemicals (UNEP/WG.155/4, 11 November 1986) (Prepared in conjunction with IRPTC)	UNEP	UNEP	AEFRS
Comparison of the Second revised Draft Guidelines for the Exchange of Information on Potentially Harmful Chemicals in International Trade, with FAO International Code of Conduct on the Distribution and Use of Pesticides and with the OECD Recommendation c(84) 37 (Final) on Information Exchange Related to Export of Banned or Severely Restricted Chemicals (UNEP/WG.155/5, 12 November 1986)	UNEP	UNEP	AEFRS
Updated version of the Register of International Treaties and Other Agreements in the Field of the Environment	UNEP	UNEP	ACEFRS
Conventions and Protocols in the field of the environment (UNEP/GC.14/18)	UNEP	UNEP	ACEFRS

Title	Produced by	Financed by	Languages
<i>Environmental education and training (Budget sublines 3101 and 3102)</i>			
Final Report of a Consultation Meeting on the Incorporation of Environmental Education into Technical and Vocational Education	UNESCO	UNEP/UNESCO	E
Directory of Tertiary level Institutions offering Environmental Education and Training Courses in Asia and the Pacific Region	UNEP	UNEP	E
Environmental education and training in Asia and the Pacific	UNEP	UNEP	E
<i>Public information (Budget subline 3103)</i>			
None			
<i>INFOTERRA (Budget subline 3104)</i>			
None			
<i>Data and the state of the environment (Budget subline 3105)</i>			
None			
<i>Global Environmental Monitoring System (GEMS) (Budget subline 4101)</i>			
(Map: Scale 1:100,000) Landscape Ecological Vegetation Map of Kora National Reserve, Kenya	UNEP	UNEP	E
GEMS Sahel Series: No. 1 Introduction to Sahelian Pastoral Ecosystems Project	UNEP	UNEP	E
GEMS Sahel Series: No. 2 Rainfall in the Ferlo (Sahelian Region of North Senegal) since 1919	UNEP	UNEP	EF
GEMS Sahel Series: No. 3 Use of Light Aircraft in the Inventory and Monitoring of Sahelian Pastoral Ecosystems	UNEP	UNEP	E

Title	Produced by	Financed by	Languages
GEMS Sahel Series: No. 4 Sampling the Sahel	UNEP	UNEP	EF
GEMS Sahel Series: No. 5 Monitoring Pasture Production by Remote Sensing	UNEP	UNEP	E
GEMS Sahel Series: No. 6 Inventory of Water Resources in the Ferlo	UNEP	UNEP	E
GEMS Sahel Series: No. 7 Woody Vegetation in the Sahel	UNEP	UNEP	E
GRID Brochure	UNEP	UNEP	F
GRID Information Series No. 3 Status Report: March 1985-April 1986	UNEP	UNEP	E
GRID Information Series No. 4 Data Sources, Standards, and Quality Control for a GEMS-GRID Kenya Case Study, July 1986	UNEP	UNEP	E
GRID Information Series No. 5 Interim GRID Data Release Policy	UNEP	UNEP	E
GRID Information Series No. 6 Status Report: April-September 1986	UNEP	UNEP	E
Late Quaternary Environments in the Chalbi Basin, Kenya	UNEP	UNEP	E
Tropical Forest extent, changes, wood production, exports and imports. Typescript 7 pp. + Tables and Figures	UNEP	UNEP	E
UNEP/GEMS Environment Library No. 1: The Ozone Layer	UNEP	UNEP	E
UNEP/GEMS Environment Library No. 2: The Greenhouse Gases	UNEP	UNEP	E
(Films: 16mm, VHS and U-matic), Vanishing Earth —Soil Vanishing Earth—Water. Two 55-minute films	BBC/WGBH Boston	UNEP/BBC	E
<i>Outer limits, research and assessment (Budget subline 4102)</i>			
Report of the eighth session of the Coordinating Committee on the Ozone Layer UNEP UNEP/CCOL/VIII	UNEP	UNEP	E

Title	Produced by	Financed by	Languages
Report of the fifth session of the UNEP Scientific Advisory Committee of the World Climate Impact Studies Programme UNEP/SAC/V	UNEP	UNEP	E
Report of the first part of the Workshop on the Control of Chlorofluorocarbons UNEP/WG.148/2	UNEP	UNEP	E
Report of the second part of the Workshop on the Control of Chlorofluorocarbons UNEP/WG.148/3	UNEP	UNEP	E
UNEP Policy Support Document for the Vienna Group UNEP/WG.151/Background 4	UNEP	UNEP	E
Report of the International Conference on the Assessment of the role of carbon dioxide and of other Greenhouse Gases in climate variations and associated impacts WMO-661	WMO	UNEP/WMO/ICSU	E
Drought, Famine and the Seasons in sub-Saharan Africa	U.S. National Centre for Atmospheric Research	UNEP	E
<i>Oceans</i> (Budget sublines 5101, 5102, 5103)			
None			
<i>Water</i> (Budget line 52)			
Draft Diagnostic Study on the Present State of Ecology and the Environmental Management of the Common Zambezi River System. UNEP/WG.147/2/ Rev.1, 26 July 1986.	UNEP	UNEP	E
Draft Agreement on the Action Plan for the Environmental Management of the Common Zambezi River System UNEP/WG.159/2 18 November 1986	UNEP	UNEP	E
Towards Environmentally Sound Water Management	The Country Press, GB	UNEP	E

Title	Produced by	Financed by	Languages
Environmentally Sound Management of water resources; Keynote paper, IAHS 2nd General Assembly	IAHS	UNEP	E
<i>Soils</i> (Budget subline 6101)			
None			
<i>Tropical forests</i> (Budget subline 6102)			
Recherche entomologique dans les écosystèmes forestiers africains Rapport de l'Atelier régional Abidjan (Côte d'Ivoire November 1986)	IET	UNEP/UNESCO/ IET	F
Proceedings of the Symposium Road to extinction	IUCN	UNEP/IUCN	E
Estudio de Aspectos Forestales	UNEP	UNEP	S
Estudio sobre agricultura Andina	UNEP	UNEP	S
Estudio sobre cultivos Andinos	UNEP	UNEP	S
Estudio sobre aspectos sociales organizativos, agro- culturales y educativos	UNEP	UNEP	S
Campesinos y Medio Ambiente	UNEP	UNEP	S
<i>Other ecosystems</i> (Budget subline 6103)			
None			
<i>Management of agricultural chemicals and residues</i> (Budget subline 6104)			
Characterisation of <i>leishmania</i> : its relevance to epidemiology and control in Algeria	UNEP	UNEP	E
Mechanisms of pathogenicity of <i>trypanosoma cruzi</i>	UNEP	UNEP	E
An epidemiologic study on the role of the domestic dog on the transmission and control of American visceral leishmaniasis AVL in the state of Ceara Brazil	UNEP	UNEP	E

Title	Produced by	Financed by	Languages
Cytochemical studies on kinetoplast basic protein in <i>leishmania gerbilli</i>	UNEP	UNEP	E
Effect of high magnetic field for ciliates growth	UNEP	UNEP	E
Studies on morphogenesis accompanying conjugation in <i>euplotes woodruffi</i>	UNEP	UNEP	E
Studies of Biological monitoring using PFU protozoan community	UNEP	UNEP	E
Use of protozoan communities to predict environmental effects of pollutants	UNEP	UNEP	E
Effect of bacteria on the biology of <i>trichomonas vaginalis</i>	UNEP	UNEP	E
Benthic gymnamoebae as micropredator component in a non-reclaimed mangrove swamp of gangetic estuary, India	UNEP	UNEP	E
Interactions of malaria and man: some recent Indian experience	UNEP	UNEP	E
On the taxonomy of haemoflagellates inhabiting the blood of fishes in the composite fish farming ponds	UNEP	UNEP	E
Cellular aspects of pesticide pollution using microorganisms as a model system	UNEP	UNEP	E
Prevalence and protein analysis of <i>sarcocystis fusiformis</i>	UNEP	UNEP	E
Chemotherapy against animal trypanosomiasis in the Sudan	UNEP	UNEP	E
Interaction between malaria and malnutrition	UNEP	UNEP	E
Report of the Technical Discussions on The Role of Intersectoral Co-operation in National Strategies for Health for All	WHO	WHO/UNEP/ others	E

Title	Produced by	Financed by	Languages
Paper of the CIDA/UNEP Consultant to Botswana and Zambia to review status of tsetse control operations	UNEP	CIDA/UNEP	E
Sex attraction in two lepidoptera pests of pigeon pea	UNEP	UNEP	E
<i>Wildlife and protected areas (Budget subline 6105)</i>			
Summary Report of the Second Meeting of the Technical Committee of the CITES Convention	UNEP/CITES	UNEP/CITES	EFS
Notifications to the Parties	UNEP/CITES	UNEP/CITES	EFS
Register of Operations which Breed Specimens of Species Included in Appendix I in Captivity for Commercial Purposes	UNEP/CITES	UNEP/CITES	EFS
Wetlands Actions Strategy for Latin America and the Caribbean	IUCN/UNEP	UNEP/IUCN	ES
Report on Study on felids in Bolivia	UNEP/CITES	UNEP/CITES	E
Report on Study on Caimans in Bolivia	UNEP/CITES	UNEP/CITES	E
<i>Genetic resources (Budget subline 6106)</i>			
Evaluating the effects of introducing novel organisms into the environment	UNEP	UNEP	E
<i>Lithosphere (Budget subline 6107)</i>			
None			
<i>Arid and semi-arid lands ecosystems and desertification control (Budget line 62)</i>			
Desertification in the Third World	UNEP	UNEP	E
Proceedings of the Camel Workshop Wamba, Kenya	UNEP	UNEP	E

Title	Produced by	Financed by	Languages
Use of Landsat imagery for the analysis of the original Taklamakan (China) wind system	UNEP	UNEP	E
Deciphering wind directions from dune orientations in space images of deserts and arid lands	UNEP	UNEP	E
Wind erosion, sand encroachment and protection methods for sandy environments	UNEP	UNEP	E
Raising the productivity of arid lands by planting trees and shrubs	UNEP	UNEP	E
Report of the second <i>ad hoc</i> meeting of the Inter-Agency Working Group on Desertification	UNEP	UNEP	E
Report of the thirteenth meeting of the Inter-Agency Working Group on Desertification	UNEP	UNEP	E
Peru: Scheme for Integrated Socio-Economic Development of ICA Department (PERU) to Combat Desertification	UNEP/COM/UNEP	UNEP	S
Mali: Scheme for Integrated Socio-Economic Development for Timbuktu region (MALI) to Combat Desertification	UNEP/COM/UNEP	UNEP	F
Nepal: Development and Environment	UNEP	UNEP	E
Pakistan: Resources, Development and Impact on Environment	UNEP	UNEP	E
Argentina: Environmental Problems and Policies in Argentina	UNEP	UNEP	E
Ethiopia: Country Profile	UNEP	UNEP	E
Botswana: An Environmental Profile	UNEP	UNEP	E
Senegal: Country Profile	UNEP	UNEP	E
Burkina Faso: Country Profile	UNEP	UNEP	E

Title	Produced by	Financed by	Languages
Mali: Country Profile	UNEP	UNEP	E
Niger: Country Profile	UNEP	UNEP	E
Mauritania: Country Profile	UNEP	UNEP	E
Kenya: Country Profile	UNEP	UNEP	E
Somalia: Country Profile	UNEP	UNEP	E
Sudan: Combating Desertification in the Sudan	UNEP	UNEP	E
Uruguay: Country Profile	UNEP	UNEP	S
<i>Environmental Health (Budget subline 7101)</i>			
PEEM Newsletter No.14	WHO	WHO/FAO/UNEP	E
La lettre d'information du TEAE No. 7	WHO	WHO/FAO/UNEP	E
Annual Report of the Fifth Meeting of the Panel of Experts on Environmental Management for Vector Control (PEEM)	WHO	WHO/FAO/UNEP	E
Report of the Technical Discussions on the Role of Intersectoral Co-operation in National Strategies for Health for All	WHO	UNEP/UNCHS/ IYSH/FAO// UNESCO/ United Nations Office for Development and International Economic Co-operation	E
<i>International Register of Potentially Toxic Chemicals (IRPTC) (Budget subline 7102)</i>			
Implementation of the Provisional Notification Scheme for Banned and Severely Restricted Chemicals (UNEP/WG. 155/4). Progress Report prepared for the third session of the Ad-Hoc Working Group of Experts for the Exchange of Information on Potentially Harmful Chemicals (in particular pesticides) in International Trade, London, 4-10 February 1987	UNEP	UNEP	E

Title	Produced by	Financed by	Languages
Summary report on the third meeting of experts to update the list of environmentally dangerous chemical substances and processes of global significance Geneva, 8-12 December 1986	UNEP	UNEP	E
<i>Working Environment</i> (Budget subline 7103)			
None			
<i>Human settlements</i> (Budget subline 7104)			
Policy guidelines for the Control of Environmental Pollution in urban areas of developing countries	UNEP	UNEP	E
<i>The arms race and the environment</i> (Budget line 81)			
None			
<i>Regional and Technical Co-operation</i> (Budget line 82)			
None			

Annex IV

MEETINGS HELD IN 1986

A. EXPERT GROUP MEETINGS

Title	Venue and dates	Financed by	Organized by
<i>Environment and development (Budget sublines 2101 and 2102)</i>			
Meeting of an <i>Ad Hoc</i> Expert Group on Integration of Environmental Considerations in Development Planning	Geneva, 27 and 28 January	UNEP	UNEP
Fourth Expert Group Meeting on Environmental Accounting	Washington, 17 and 18 November	UNEP	World Bank/UNEP
	Paris, 20 and 21 November	UNEP	World Bank/UNEP
<i>Energy (Budget subline 2103)</i>			
EGM Energy Conservation in the Arab Countries in Western Asia	Bahrain, 1-6 February	UNEP/ESCWA	UNEP
<i>Industry and transportation (Budget subline 2104)</i>			
First Meeting of the Technical Advisory Committee on Industry and Environment	Paris, 24 and 25 June	UNEP	UNEP

Title	Venue and dates	Financed by	Organized by
Second Meeting of the Technical Advisory Committee on Industry and Environment	Paris, 2 and 3 October	UNEP	UNEP
<i>Environmental law and its application (Budget subline 2105)</i>			
First Session of the Ad Hoc Working Group of Legal and Technical Experts for the Elaboration of a Protocol on the Control of Chlorofluorocarbons to the Vienna Convention for the Protection of the Ozone Layer (Vienna Group)	Geneva, 1-5 December	UNEP	UNEP
Advisory Panel of Experts to Discuss and Evaluate implementation of the Provisional Notification Scheme for Banned and Severely Restricted Chemicals	Paris, 10-11 September	UNEP	UNEP
<i>Environmental education and environmental training (Budget sublines 3101 and 3102)</i>			
International Symposium on Environment and the Teaching of Social Sciences	Paris, February	UNEP/UNESCO	UNESCO
<i>Public information (Budget subline 3103)</i>			
None			
<i>INFOTERRA (Budget subline 3104)</i>			
None			

Title	Venue and dates	Financed by	Organized by
<i>Data and state of the environment (Budget subline 3105)</i>			
Expert Group Meeting on the State-of-the-Environment Report 1986.	Nairobi, 7-11 April	UNEP/WMO	UNEP
<i>Global Environmental Monitoring System (GEMS) (Budget subline 4101)</i>			
Expert Group Meeting on Acid Precipitation	Geneva, 17-21 November	UNEP	UNEP/WMO
<i>Outer limits (Budget subline 4102)</i>			
Eighth session of the Co-ordinating Committee on Ozone Layer (Physics/Chemistry Group)	Nairobi, 24-28 February	UNEP	UNEP
Eighth session of the Co-ordinating Committee on Ozone Layer (Effects Group)	Bilthoven, Netherlands, 19-21 November	UNEP	UNEP
Fifth session of the UNEP Scientific Advisory Committee of the World Climate Impact Studies Programme	Warsaw, 18-22 March	UNEP	UNEP
International Conference on Health and Environmental Effects of Ozone Modification and Climate Change	Washington, 16-20 June	United States Environmental Protection Agency/UNEP	United States Environmental Protection Agency/UNEP

Title	Venue and dates	Financed by	Organized by
First meeting of the UNEP/ WMO/ICSU Advisory Group on Greenhouse Gases	Geneva, 1-3 July	UNEP/WMO/ICSU	WMO
International Symposium on Climate and Human Health	Leningrad, USSR, 22-26 September	UNEP/WMO/WHO	WMO
<i>Oceans</i> (Budget sublines 5101,5102,5103)			
Meeting of experts on development of tourism harmonized with the environment	Split, Yugoslavia, 21-23 May	UNEP (PAP/RAC)	
Meeting of experts to review the methodology and guidelines for environmental impact assessment	Split, Yugoslavia, 7-9 July	UNEP (PAP/RAC)	
<i>Ad hoc</i> meeting of experts on the preparation of workshops dealing with basic methodological elements, tools and techniques for integrated planning and management of coastal zones	Split, Yugoslavia, 8-10 September	UNEP (PAP/RAC)	
Meeting of experts on codes of practice for solid and liquid waste	Split, Yugoslavia, 13-16 October	UNEP (PAP/RAC)	
PAP/RAC-WHO-EURO Expert Meeting on the preparation of a manual for water resources management in Mediterranean islands and isolated coastal areas	Split, Yugoslavia, 3-5 November	UNEP (PAP/RAC)	

Title	Venue and dates	Financed by	Organized by
Expert consultation on guidelines for specially protected areas	Athens, November	UNEP (MEDU)	
Meeting of experts on the South Asian Seas regional programme	Bangkok, 1-5 December	UNEP (OCA/PAC)/ SACEP	
Meeting of experts on East Asian Seas action plan	Bangkok, 8-12 December	UNEP (OCA/PAC)	
Meeting of experts on water resources management practices in large Mediterranean islands	Malta, 8-12 December	UNEP (PAP/RAC)	
CPPS/UNEP meeting of experts to review the South East Pacific Action Plan	Bogota, 9-12 December	CPPS/UNEP (OCA/PAC)	
<i>Water (Budget line 52)</i>			
Inaugural meeting of the International Lake Environment Committee	Otsu, Japan, 21 and 22 February	Shiga Prefectural Government/ UNEP	Shiga Prefectural Government
Second meeting of the Working Group of Experts on the Zambezi River System	Lusaka, 18-21 March	UNEP	UNEP
Second meeting of the Scientific Expert Group on Integrated Environmental Evaluation of Water Resources	Paris, 24-27 March	UNEP/ UNESCO	UNESCO

Title	Venue and dates	Financed by	Organized by
Panel meeting on Integration of Environmental Aspects of Water Resources Engineering Education	Galway, Ireland, 21-25 April	UNEP/ UNESCO	UNESCO
Fourth meeting of the Advisory Group on Water Resources	Nairobi, 10-14 November	UNEP	UNEP
<i>Soils (Budget subline 6101)</i>			
<i>Ad-Hoc</i> Expert Group Meeting on Experiences in Formulating National Soils Policies	Hamburg, Federal Republic of Germany 13-20 August	UNEP	UNEP
Project Advisory Committee meeting on the Application of Land/Soil Management in Mountain Ecosystems	Sofia, 7-14 December	Government of Bulgaria/ UNEP/COM/ UNEP	Government of Bulgaria
<i>Tropical forests (Budget subline 6102)</i>			
None			
<i>Other ecosystems (Budget subline 6103)</i>			
None			
<i>Management of agricultural chemicals and residues (Budget subline 6104)</i>			
None			

Title	Venue and dates	Financed by	Organized by
<i>Wildlife and protected areas</i> (Budget subline 6105)			
None			
<i>Genetic resources</i> (Budget subline 6106)			
Second meeting of the FAO/UNEP Joint Expert Panel on Animal Genetic Resources Conservation and Management	Warsaw, 13-18 June	UNEP	UNEP
Meeting of the Review and Co-ordination Board of the biological nitrogen fixation project in the Sudan	Khartoum, 22-26 June	UNEP	UNEP/Sudanese National Research Council
ICRO Panel of Applied Microbiology and Biotechnology	Manchester, United Kingdom, 8 and 9 September	UNEP	ICRO
International Microbial Strain Data Network Group Meeting	Manchester, United Kingdom, 11-12 September	UNEP	UNEP/ICSU/WFCC
<i>Lithosphere</i> (Budget subline 6107)			
Second session of the International Scientific Council on Geology and Environment	Paris, 14-22 April	UNEP/UNESCO/ UNEPCOM	UNESCO
Workshop and Working Group Meeting on the Impact of Mining on the Environment	Tallin, USSR, 18-25 June	UNEP/ UNESCO	UNEPCOM

Title	Venue and dates	Financed by	Organized by
<i>Arid and semi-arid lands ecosystems and desertification (Budget line 62)</i>			
None			
<i>Environmental health (Budget subline 7101)</i>			
Thirty-ninth World Health Assembly	Geneva, May	WHO	WHO
Twelfth session of the ACC Sub-Committee on Nutrition	Tokyo, 7-11 April	ACC/UNEP	ACC
Sixth Annual meeting of PEEM	Geneva, 8-12 September	WHO/FAO/ UNEP	WHO
Meeting on human ecology	Delphi, Greece, 30 September — 3 October	WHO/UNEP	WHO
<i>International Register of Potentially Toxic Chemicals (IRPTC) (Budget subline 7102)</i>			
IRPTC Expert Group to update the List of Environmentally Dangerous Chemical Substances and Processes of Global Significance	Geneva, 8-12 December	UNEP	UNEP
International Workshop to discuss the updated version of the English/Russian Glossary of Selected Terms in Preventive Toxicology	Moscow, 1-5 December	UNEP/COM/IRPTC	UNEP/COM/ IRPTC

Title	Venue and dates	Financed by	Organized by
<i>Working environment (Budget subline 7103)</i>			
None			
<i>Human settlements (Budget subline 7104)</i>			
Expert Group Meeting on the Control of Environmental pollution in Urban Areas of Developing Countries	Nairobi, 26-30 May	UNEP	UNEP
UNEP/WHO Expert Group Panel on Environmental Health Guidelines (including Criteria) for Housing and Urban Development	Leningrad, USSR, 21-29 October	UNEP/WHO	UNEP/WHO
<i>The arms race and the environment (Budget line 81)</i>			
None			
<i>Regional and technical co-operation (Budget subline 82)</i>			
None			

B. WORKSHOPS, SEMINARS AND OTHER MEETINGS

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Title	Venue and dates	Financed by	Organized by	Number of participants
<i>Environment and development (Budget sublines 2101 and 2102)</i>				
Workshop for Administration Decision Makers in Sectoral and Regional Executing and Co-ordinating Agencies and Senior Planning Practitioners	Nicosia, 15-21 January	UNEP/UNDP/Government of Cyprus	Government of Cyprus	80
International Conference on Economics of Dryland Degradation and Rehabilitation	Canberra, 10-14 March	UNEP/Government of Australia/Commonwealth Secretariat	Government of Australia	150
Expert Group Workshop on Environmental Planning and Management for Local and Regional Development: Focus on Training Aspects Derived from Studies of Inland Water Management	Otsu, Japan, 10-14 November Nagoya, Japan, 17-21 November	UNCRD/ILEC/UNEP UNCRD/ILES/UNEP	UNCRD/ILEC UNCRD/ILEC	35
South and South-East Asia Regional Workshop on Economics of Dryland Degradation and Rehabilitation	New Delhi, 25-29 August	UNEP/Government of Australia/CIVA Society for promotion of Wasteland Development	Society for promotion of Wasteland Development	45
<i>Energy (Budget subline 2103)</i>				
Inter-Agency Workshop on Assessing and Managing Health and Environmental Risks from Energy and other Complex Industrial Systems	Paris, 12-17 October	UNEP/IAEA/WHO	IAEA	60

Title	Venue and dates	Financed by	Organized by	Number of participants
<i>Industry and transportation (Budget subline 2104)</i>				
Meeting of Senior Government Officials and Chief Executive Officers of Industry (follow-up to World Industry Conference on Environmental Management)	Geneva, 23 January	UNEP	UNEP	28
Conférence-atelier sur l'importance des technologies propres pour un développement économique durable	Dakar, 12-15 February	Government of Senegal/French Ministry of Environment/UNEP	Government of Senegal	64
International Seminar on Environmental Management of the Pulp and Paper Industry	Helsinki, 14-17 May	Government of Finland/UNEP	Government of Finland/UNEP	60
Consultative meeting with trade/industry associations, institutes and organizations	Paris, 27 June	UNEP	UNEP	14
Workshop on Environmental Aspects of Non-Wood Fibres for Pulp and Paper Manufacturing	China, 24-28 November	Governments of China and Sweden/UNEP	Government of China/UNEP	70
<i>Environmental law and its application (Budget subline 2105)</i>				
First Part of the Workshop on the Control of Chlorofluorocarbons (CFCs)	Rome, 26-30 May	UNEP	UNEP	
Second Part of the Workshop on the Control of Chlorofluorocarbons (CFCs)	Leesburg, USA 8-12 September	UNEP	UNEP	

Title	Venue and dates	Financed by	Organized by	Number of participants
<i>Environmental education and training (Budget sublines 3101 and 3102)</i>				
Subregional Workshop on Teacher Training in Environmental Education for Africa — Ethiopia, Kenya, Malawi, Somalia and Tanzania	Nairobi, 14-26 April	UNEP/UNESCO	UNEP/UNESCO/ IEEP and Kenya Science Teachers College	22
Consultation Meeting on the Incorporation of Environmental Education into Technical and Vocational Education	Singapore, 10-14 March	UNEP/UNESCO	UNESCO (under UNEP/UNESCO/ IEEP)	
International Seminar on Information Networks relating to Hazardous Wastes	Cairo, 23-25 November	UNEP/UNESCO	World Federation of Engineering Organizations and Council of Egyptian Engineering Organizations	
Joint ECA/UNEP/ESAMI Workshop on the incorporation of environmental components into training programmes of ECA-sponsored institutions "Training of Trainers"	Nairobi, 8-19 December	UNEP/ECA	ECA	8
<i>Public information (Budget subline 3103)</i>				
Second Journalistic Attachment Programme	Nairobi, 12-24 May	UNEP	UNEP	
Symposium for African Journalists	Nairobi, 8-11 October	UNEP	UNEP	

Title	Venue and dates	Financed by	Organized by	Number of participants
<i>INFOTERRA</i> (Budget subline 3104)				
INFOTERRA National Seminar in Paraguay	Asuncion, 14 August	Government of Paraguay	Government of Paraguay/UNEP	40
INFOTERRA National Seminar in Kenya	Nairobi, 15 August	Government of Kenya	Government of Kenya/UNEP	66
INFOTERRA National Seminar in Bolivia	La Paz, 18 August	Government of Bolivia	Government of Bolivia/UNEP	30-40
INFOTERRA National Seminar in Ecuador	Quito, 21 August	Government of Ecuador	Government of Ecuador/UNEP	100
INFOTERRA National Seminar in Chile	Santiago, 25 August	Government of Chile	Government of Chile/UNEP	30
INFOTERRA National Seminar in Jamaica	Kingston, 5 September	Government of Jamaica	Government of Jamaica/UNEP	40
INFOTERRA National Seminar in Costa Rica	San Jose, 8 September	Government of Costa Rica	Government of Costa Rica/UNEP	60
INFOTERRA National Seminar in Guatemala	Guatemala City, 11 September	Government of Guatemala	Government of Guatemala/UNEP	100
<i>Data and the state of the environment</i> (Budget line 3105)				
None				
<i>Global Environmental Monitoring System (GEMS)</i> (Budget subline 4101)				
Twentieth International Symposium on Remote Sensing of the Environment	Nairobi, 4-10 December	UNEP/ECA/USAID/ NASA/NOAA/USDA/ CNES/ERIM/ RCSSMRS	ERIM	500

Title	Venue and dates	Financed by	Organized by	Number of participants
<i>Outer limits (Budget subline 4102)</i>				
Workshop on the Control of Chlorofluorocarbons	Rome, 26-30 May	UNEP	UNEP	75
1st Part	Leesburg, United States, 1-8 September	UNEP	UNEP	75
2nd Part				
Workshop on Policy-oriented Assessment of Climate Variations	Laxenburg, Austria, 20 June—2 July	UNEP/WMO/ IIASA/Canadian Climate Centre; Governments of the United States and the Netherlands	IIASA	50
Regional Workshop on Drought the 1984 Experience	Nairobi, 19-23 May	UNEP/ Kenya National Environment Secretariat	Government of Kenya	50
<i>Oceans (Budget sublines 5101,5102,5103)</i>				
Review meeting on jelly fish research programme	Trieste, Italy 27-29 January	UNEP (MEDU)		
Fifth meeting of the Steering Committee of the Blue Plan	Sophia Antipolis, France 12-13 March	UNEP (BP/RAC)		
First meeting of the Bureau of the Contracting Parties to the Barcelona Convention	Madrid, 20 March	UNEP (MEDU)		

Title	Venue and dates	Financed by	Organized by	Number of participants
Seminar on the experiences in the protection and rehabilitation of selected Mediterranean historic settlements	Split, Yugoslavia 16-19 April	UNEP (PAP/RAC)		
Seminar on environmental aspects of aquaculture	Patras, Greece, 21-30 April	UNEP (PAP/RAC)		
Fifth meeting of the Co-ordinating Body for the Seas of East Asia (COBSEA)	Singapore, 25-26 April	UNEP (OCA/PAC)		
Joint meeting of Blue Plan and Priority Actions Programme National Focal Points	Athens, 28-30 April	UNEP (MEDU)		
Inter-regional coral taxonomy workshop and training course	Bolinao, Philippines 12-25 May	Philippines (NRM/C)/ UNESCO/UNEP (OCA/PAC)		
Third consultative meeting on research and training institutions	Guam, 15-21 June	SPREP/ UNEP (OCA/PAC)		
Fourth meeting of the Working Group on Scientific and Technical Co-operation for MED POL	Athens, 16-20 June	UNEP (MEDU)		
National seminar on marine oil pollution	Alexandria, Egypt, 21 June—1 July	IMO (ROCC)/ UNEP (MEDU)		
Workshop on intercalibration of analytical techniques for organochlorines	Port Moresby, Papua-New-Guinea, 23 June—4 July	SPREP/IOC/ UNEP (OCA/PAC)		
Seminar on integrated planning and management of Mediterranean coastal zones	Athens, 25-27 June	UNEP (PAP/RAC)		

Title	Venue and dates	Financed by	Organized by	Number of participants
SPREP Co-ordinating Group Meeting	Noumea, 24-25 June	SPREP/UNEP		
Study group on Mediterranean scenarios	Sophia Antipolis, France, 30 June—1 July	UNEP (BP/RAC)		
Regional conference on the SPREP work	Noumea, 1-5 September	SPREP/UNEP (OCA/PAC)		
Second meeting of the Bureau of the Contracting Parties to the Barcelona Convention	Madrid, 11 September	UNEP (MEDU)		
Consultation meeting on health effects of methylmercury in the Mediterranean area	Athens, 15-19 September	WHO/EURO/FAO/ UNEP (MEDU)		
Technical consultation on pollution resulting from exploration and exploitation of the continental shelf and the sea-bed and its sub-soil	Athens, 22-26 September	UNEP (MEDU)		
Seminar on water and sanitation in small Mediterranean islands and isolated coastal areas	Palma de Mallorca, Spain, 24-26 September	UNEP (PAP/RAC)		
CPPS/UNEP/IMO/SIDA contingency planning to control oil spills in the South-East Pacific	Viña del Mar, Chile, 29 Sept.—2 Oct.	CPPS/IMO/SIDA UNEP (OCA/PAC)		
Seminar on soil protection	Split, Yugoslavia, 1-3 October	UNEP (PAP/RAC)		

Title	Venue and dates	Financed by	Organized by	Number of participants
Workshop on oil spill contingency planning	Cairns, Australia, 13-17 October	Government of Australia, IMO/SPREP/ UNEP (OCA/PAC)		
Seminar on seismic risk reduction in the Mediterranean region	Genoa, Italy, 16-18 October	UNEP (PAP/RAC)		
VIII ICSEM/IOC/UNEP workshop marine pollution of the Mediterranean Sea	Palma de Mallorca, Spain, 20-22 October	ICSEM/IOC/ UNEP (MEDU)		
Sixth meeting of Steering Committee of Blue Plan	Rome, 21-22 October	UNEP (BP/RAC)		
Workshop on treatment of rum distillery wastes	Guadeloupe, 28-30 October	Government of France/ UNEP/CAR/RCU		
Working Group meeting on development of marine environmental databases	Jakarta, October	UNESCO/UNEP (OCA/PAC)		
Workshop on the determination of mercury, lead and cadmium in marine sediments and organisms	Monaco, 3-7 November	IAEA/ILMR/FAO/ UNEP (MEDU)/ IOC		
Workshop on sustainable development and environmental management in small islands	Puerto Rico, 3-7 November	MAB/UNESCO/ UNEP (OCA/PAC)		
Workshop on analysis of petroleum hydrocarbons in biota and sediments	Puerto Morelos, Mexico, 9-23 November	IOC/IOCARIBE/ UNEP (OCA/PAC)		
Seminar on solar energy	Split, Yugoslavia, 17-19 November	UNEP (PAP/RAC)		

Title	Venue and dates	Financed by	Organized by	Number of participants
Conference of Plenipotentiaries to adopt Convention for the Protection and Development of the Natural Resources and Environment of the South Pacific Region	Noumea, 17-25 November	SPREP/UNEP (OCA/PAC)		
CPPS/ECLAC/UNEP regional workshop on environmental impact assessment of a port development scheme in the South-East Pacific Region	Guayaquil, Ecuador, 24-28 November	CPPS/ECLAC/ UNEP (OCA/PAC)		
Workshop on technical and scientific information for oil spill contingency planning	Indonesia, November	Indonesia/UNEP (OCA/PAC)		
Seminar on Mediterranean tourism harmonized with the environment	Split, Yugoslavia, 15-17 December	UNEP (PAP/RAC)		
<i>Water</i> (Budget line 52)				
Regional Meeting on Socio-economic and Policy Aspects of Water Resources Management	Addis Ababa, 2-7 June	ECA/UNESCO/ Governments	ECA	60
Seminar on River and Lake Basin Development in West Africa	Dakar, 25-26 June	African Institute for Economic Development and Planning	African Institute for Economic Development and Planning	35

Title	Venue and dates	Financed by	Organized by	Number of participants
Second Scientific Assembly (IAHS)	Budapest, 2-10 July	UNEP/ UNESCO/ WHO/ IAHS/ Government of Hungary	IAHS/ Government of Hungary	450
Regional Workshop on Treatment and Reuse of Sewage Effluents for Irrigation	Amman, 10-13 August	FAO/ Government of Jordan	Water Authority of Jordan	80
Fourteenth Meeting of the Steering Committee for Co-operative Action of International Drinking Water Supply and Sanitation Decade	Geneva, 4-5 September	UN Agencies	WHO	30
Seventh session of the ACC Inter-secretariat Group for Water Resources	Geneva, 8-12 September	UN Agencies	UN	20
International Symposium on the Impact of Large Water Projects	Paris, 27-31 October	UNEP/ UNESCO/ IAHS/ IIASA	UNESCO	100
<i>Soils</i> (Budget subline 6101)				
None				
<i>Tropical forests</i> (Budget subline 6102)				
Workshop on Rainforest Regeneration and Management	Guri, Venezuela, 24-28 November	UNEP/ UNESCO	IVIC	40

Title	Venue and dates	Financed by	Organized by	Number of participants
Regional training workshop for demographic analysis in lowland dipterocarp forests	Pasoh, Malaysia, 4-16 August	UNEP/UNESCO	UNESCO	15
Regional training workshop on tropical forest management in South East Asia	Kepong, Malaysia, 16 June—5 July	UNEP/UNESCO/EWC/GTZ/WWF	UNESCO	25
Training workshop on Andean agriculture	Cajamarca, Peru, 28 February — 2 March	UNEP/Government of Peru	UNEP	30
Expanding the role of NGOs in national forestry programmes: a regional workshop for Africa	Nairobi, 24-28 November	ELC/WRI UNEP	ELC/WRI	36
<i>Other ecosystems (Budget subline 6103)</i>				
None				
<i>Management of agricultural chemicals and residues (Budget subline 6104)</i>				
The Second International Conference on Plant Protection in the Tropics	Kuala Lumpur, 17-20 March	Malaysian Plant Protection Society (MAPPS)/ UNEP/others	MAPPS	520
The First International Conference on Tropical Entomology	Nairobi, 31 August - 5 September	UNEP/others/ International Conference on Tropical Entomology	Organizing Committee for the First International Conference on Tropical Entomology	400

Title	Venue and dates	Financed by	Organized by	Number of participants
<i>Wildlife and protected areas (Budget subline 6105)</i>				
World Conservation Strategy Conference	Ottawa, 31 May—5 June	UNEP/IUCN/ WWF/Environment Canada, Canadian Wildlife Federation	IUCN/UNEP/ Environment Canada, Canadian Wildlife Federation	450
Second meeting of the Technical Committee to the CITES Convention	Lausanne, Switzerland, 23-27 June	UNEP/CITES/ Government of USA Pet Industry Joint Advisory Council, City of Lausanne	UNEP/CITES Secretariat	124
CITES Enforcement Seminar	Bristol, United Kingdom, 27 September — 5 October	UNEP/CITES/ US Fur Trade Federation/ WWF Int., and WWF/US	UNEP/CITES	56
Fourteenth meeting of the Standing Committee to the CITES Convention	Ottawa, 27-31 October	UNEP/CITES/ CITES Parties/ Canadian Government	UNEP/CITES	15
International Seminar on Wetlands Conservation and Sustainable Development in Latin America and the Caribbean	Brasilia, 3-8 December	IUCN/UNEP/ US National Park Service (USNPS)/ Companhia Vale do Rio Doce (CVRD)/ WWF	Instituto Brasileiro de Desenvolvimento Florestal (IBDF)	50
<i>Genetic resources (Budget subline 6106)</i>				
First meeting of the UNIDO/WHO/UNEP Working Group on Biotechnology Safety	Vienna, 27-29 January	UNIDO/WHO/UNEP	UNIDO	7

Title	Venue and dates	Financed by	Organized by	Number of participants
Second meeting of the Ecosystems Conservation Working Group on <i>In situ</i> Conservation of Plant Genetic Resources	Paris, 25-26 February	UNEP/FAO/UNESCO/IUCN	FAO	6
International Workshop on Biological Diversity and Genetic Resources of Under-exploited Plants	Kew, United Kingdom, 20-24 October	Commonwealth Science Council/UNEP/IBPGR	Commonwealth Science Council	47
Second meeting of the UNIDO/WHO/UNEP Working Group on Biotechnology Safety	Geneva, 3-5 November	UNIDO/WHO/UNEP	WHO	—
Second meeting of the African Association for Biological Nitrogen Fixation	Cairo, 15-19 December	UNEP/Egyptian Society for Applied Microbiology	UNEP/Cairo/MIRCEN/Egyptian Society for Applied Microbiology	—
<i>Lithosphere</i> (Budget subline 6107)				
None				
<i>Arid and semi-arid lands ecosystems and desertification</i> (Budget line 62)				
Intergovernmental meeting on Regional Network of Research and Training Centres on Desertification	Bangkok, 8-15 September	UNEP/ESCAP	ESCAP	23
Second <i>ad hoc</i> meeting of the Inter-Agency Working Group on Desertification	Vienna, 17-19 March	UNEP/UN Agencies	UNEP	11

Title	Venue and dates	Financed by	Organized by	Number of participants
Thirteenth meeting of the Inter-Agency Working Group on Desertification	Geneva, 1-3 September	UNEP/UN agencies	UNEP	13
Workshop on Desertification and Renewable Resource Management in the West African Sudano-Sahelian Zones	Oslo, 8-14 June	World Bank/ Government of Norway/UNEP	World Bank/ Government of Norway	20
Workshop on Agro-Ecological Characterisation, Classification and Mapping	Rome, 14-18 April	ICARDA/UNEP	ICARDA/FAO	60
Seminar on Agrometeorology and Crop Protection in the Semi-arid Zones	Niamey, 8-12 December	WMO/UNEP	WMO	
Workshop on Drought and Desertification	Pune, India, 10-16 December	WMO/FAO/ UNEP	WMO	20
<i>Environment Health (Budget subline 7101)</i>				
None				
<i>International Register of Potentially Toxic Chemicals (IRPTC) (Budget subline 7102)</i>				
None				
<i>Working Environment (Budget subline 7103)</i>				
None				

Title	Venue and dates	Financed by	Organized by	Number of participants
<i>Human settlements</i>				
<i>(Budget subline 7104)</i>				
None				
<i>The arms race and the environment</i>				
<i>(Budget line 81)</i>				
Advisory meeting to Reviews UNEP's Programme on the Arms Race and the Environment	Stockholm, 16-18 October	UNEP/SIPRI	UNEP/SIPRI	4

C. TRAINING COURSE

Title	Venue and dates	Financed by	Organized by	Number of participants
<i>Environment and development (Budget sublines 2101 and 2102)</i>				
Seventh International Seminar on Environmental Impact Assessment	Aberdeen, United Kingdom, 7-19 July	UNEP/WHO/ Government of United Kingdom/ University of Aberdeen	University of Aberdeen	63
Three-month Intensive Training Course on Environmental Impact Assessment	Aberdeen, United Kingdom, 30 June — 22 September	UNEP/Government of United Kingdom/UNDP	University of Aberdeen	8
<i>Energy (Budget subline 2103)</i>				
None				
<i>Industry and transportation (Budget subline 2104)</i>				
Multiregional Training Workshop on Environmental Management of Aluminium Smelters	Dubai, 8 and 9 September	UNEP/IPAI/Dubai Aluminium Company	UNEP/IPAI/Dubai Aluminium Company	30
<i>Environmental law and environmental machinery (Budget subline 2105)</i>				
None				
<i>Environmental education and environmental training (Budget sublines 3101 and 3102)</i>				
Subregional post-graduate course in sanitary engineering	Lagos, 8-19 December	UNEP/UNESCO	UNESCO/ University of Lagos	15

Title	Venue and dates	Financed by	Organized by	Number of participants
International post-graduate course on computer analysis of environment problems	Padua, Italy, 29 September to 11 October	UNEP/UNESCO	UNESCO/ University of Padua	
International post-graduate course in ecological approaches to resources development, land management and impact assessment in developing countries	Dresden, German Democratic Republic, September 1985 - June 1986	UNEP/UNESCO	Technical University of Dresden/Govern- ment of the German Democratic Republic	18
<i>Public information (Budget subline 3103)</i>				
None				
<i>INFOTERRA (Budget subline 3104)</i>				
INFOTERRA Training Course in basic INFOTERRA operations for English/French-speaking National Focal Points	Nairobi, 24-28 November	UNEP	UNEP	13
<i>Data and state of the environment (Budget subline 3105)</i>				
None				
<i>Global Environmental Monitoring System (GEMS) (Budget subline 4101)</i>				
Twelfth training course on background air pollution measurements	Budapest, 7-26 April	UNEP/WMO	WMO	7
UNEP/UNITAR Training Programme in Geographical Information System Technology—GRID Course A	Geneva, from 13 October	UNEP/UNITAR	UNEP/UNITAR	6

Title	Venue and dates	Financed by	Organized by	Number of participants
UNEP/UNITAR Training Programme in Geographical Information System Technology—GRID Course B	Geneva, from 1 September	UNEP/UNITAR	UNEP/UNITAR	6
International Training Seminar on Forestry Application of Remote Sensing for Developing Countries	Moscow, 25 August — 12 September	UNEP/UNEP/COM	UNEP/UNEP/COM	20
<i>Outer limits (Budget subline 4102)</i>				
Training courses on agroclimatology	Alma-Ata, USSR, 17 November — 5 December	UNEP/WMO	WMO	50
<i>Oceans (Budget subline 5101,5102,5103)</i>				
Regional course on rapid assessment of sources of air, water and land pollution in the South-East Pacific	Lima, 4-8 August	CPPS/UNEP (OCA/PAC)		
Second IOC/UNEP inter-calibration exercise for oil and petroleum hydrocarbons	Barcelona, Spain, 9-18 October	IOC/UNEP (MEDU)/ IAEA/ILMR		
Air photo interpretation course for Papua-New-Guinea, Solomons, and Vanuatu	Honiara, 16-29 November	Government of Canada/SPREP/ UNEP (OCA/PAC)		
<i>Water (Budget line 52)</i>				
Training Course on Environmentally Sound Management of Water Resources	Harare, 20-31 October	UNEP	CEFIGRE	12

Title	Venue and dates	Financed by	Organized by	Number of participants
Training Course on Technical and Socio-economic Aspects of Rural Community Water Supply and Sanitation	Sophia Antipolis, France, and Lomé, 6-31 October	UNEP/CEFIGRE	CEFIGRE	20
Training Workshop on Environmental Planning and Management for Local and Regional Development	Otsu and Nagoya, Japan, 10-21 November	UNEP/ILEC/UNCRD	ILEC/UNCRD	20
Training Course on Drinking Water Quality Control	Lusaka, 10-24 October	UNEP/WHO/NORAD	WHO/ Government of Zambia	20
Training Course on Drinking Water Quality Control	Jakarta, 3-15 November	UNEP/WHO	WHO/ Government of Indonesia	20
<i>Soils</i> (Budget subline 6101)				
None				
<i>Tropical forests</i> (Budget subline 6102)				
None				
<i>Other ecosystems</i> (Budget subline 6103)				
None				
<i>Management of agricultural chemicals and residues</i> (Budget subline 6104)				
Training for self-reliance in Ecological Pest Management in the Tropics (Phase I: Africa)	Yaounde, Cameroon, 15 November — 5 December	UNEP/ICIPE/CREFPHY	(Regional Centre for Training in Plant Protection, Yaounde)	20

Title	Venue and dates	Financed by	Organized by	Number of participants
<i>Wildlife and protected areas (Budget subline 6105)</i>				
None				
<i>Genetic resources (Budget subline 6106)</i>				
Training course on nitrogen biological fixation	Dakar, 2-12 June	UNEP/FAO/UNESCO	Dakar MIRCEN	12
Training course on <i>Rhizobium</i> technology for inoculant production	Porto Alegre, Brazil, 5-21 October	UNEP	Porto Alegre MIRCEN	15
Training course on legume inoculants for Africa: Production and application	Cairo, 6-14 December	UNEP/UNESCO	Cairo MIRCEN	19
<i>Lithosphere (Budget subline 6107)</i>				
None				
<i>Arid and semi-arid lands ecosystems and desertification (Budget line 62)</i>				
Training Course on Remote Sensing	Nairobi, 1-18 April	RCSSMRS	RCSSMRS/ UNEP	11
One week Training Seminar on Assessment and Desertification Control in Ethiopia	Addis Ababa, 6-10 January	UNEP	UNEP/IDRAS Lanzhou, China	
Training Course on Rainfed Agriculture and Soil Conservation in Dry Zones	Moscow and Kazakhstan, USSR, 28 June—17 July	UNEP	UNEP/UNEP COM	19
Ten 7-day Training Courses on Afforestation techniques and Nursery establishment	Karnataka, India, June—July	UNEP/Government of India	G.G. Soans Memorial Farmers and Rural Afforestation Training Courses	1,600

Title	Venue and dates	Financed by	Organized by	Number of participants
<i>Environmental Health</i> (Budget subline 7101)				
None				
<i>International Register of Potentially Toxic Chemicals (IRPTC)</i> (Budget subline 7102)				
Second Training Seminar on Methodology of Optimal Use of Internationally prepared Health Risk Evaluations and other relevant documents on the activities aimed at the Protection of Human Health and Environment	Moscow/Sochi, 23 September — 3 October	UNEP/UNEP COM	UNEP/UNEP COM	20
Training Course on National Registers of Potentially Toxic Chemicals	Geneva, 6-24 October	Government of the Netherlands	UNEP	5
<i>Working Environment</i> (Budget subline 7103)				
None				
<i>Human settlements</i> (Budget subline 7104)				
None				
<i>The arms race and the environment</i> (Budget line 81)				
None				
<i>Regional and Technical Co-operation</i> (Budget line 82)				
None				



United Nations Environment Programme

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