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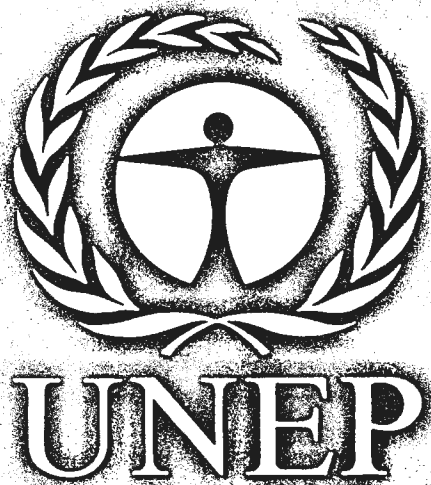
United Nations Environment Programme

# 1989 ANNUAL REPORT

of the Executive Director

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Nairobi, 1990



United Nations Environment Programme

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## **ANNUAL REPORT 1989**

Printed by United Nations Environment Programme  
P. O. Box 30552 Nairobi, Kenya

ISBN 92 807 1219 5    ISSN 1010 - 1268    Sales No. E.89.III.D.5

## CONTENTS

|                                                                                                                                                | Page |
|------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Abbreviations .....                                                                                                                            | v    |
| Chapter I THE YEAR IN RETROSPECT .....                                                                                                         | 1    |
| Chapter II THE CO-ORDINATING AND CATALYTIC<br>ROLE OF UNEP .....                                                                               | 7    |
| Chapter III THE ENVIRONMENT PROGRAMME .....                                                                                                    | 29   |
| Chapter IV INTERGOVERNMENTAL LEGISLATION OF<br>RELEVANCE TO UNEP .....                                                                         | 145  |
| Chapter V FINANCIAL AND ADMINISTRATIVE<br>AFFAIRS .....                                                                                        | 187  |
| Annex I Member States of the UNEP<br>Governing Council .....                                                                                   | 225  |
| Annex II Distribution of UNEP Staff in the<br>Professional Category and Above<br>by Region, National and level<br>as at 31 December 1988 ..... | 227  |
| Annex III Implementation of UNEP's<br>Programme Budget 1988-1989 .....                                                                         | 231  |

## ABBREVIATIONS

|         |                                                                                 |
|---------|---------------------------------------------------------------------------------|
| ACC     | Administrative Committee on Co-ordination                                       |
| ACSAD   | Arab Centre for the Study of Arid Zones and Dry Lands                           |
| AGFUND  | Arab Gulf Programme for United Nations Development Organizations                |
| ALECSO  | Arab League Educational, Cultural and Scientific Organization                   |
| AMCEN   | African Ministerial Conference on the Environment                               |
| ASEAN   | Association of South-East Asian Nations                                         |
| AVHRR   | Advanced very-high-resolution radiometer                                        |
| BAPMoN  | Background Air Pollution Monitoring Network                                     |
| CEFIGRE | International Training Centre for Water Resources Management                    |
| CIDIE   | Committee of International Development Institutions on the Environment          |
| CILSS   | Permanent Interstate Committee for Drought Control in the Sahelian Zone         |
| CITES   | Convention on International Trade in Endangered Species of Wild Fauna and Flora |
| CMEA    | Council for Mutual Economic Assistance                                          |
| DANIDA  | Danish International Development Agency                                         |
| DESCON  | Consultative Group for Desertification Control                                  |
| DOEM    | Designated Officials for Environmental Matters                                  |
| ECA     | Economic Commission for Africa                                                  |
| ECE     | Economic Commission for Europe                                                  |

|        |                                                                      |
|--------|----------------------------------------------------------------------|
| ECG    | Ecosystem Conservation Group                                         |
| ECLAC  | Economic Commission for Latin America and the Caribbean              |
| ECOSOC | Economic and Social Council                                          |
| EEC    | European Economic Community                                          |
| EMINWA | Environmentally sound management of inland waters                    |
| 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              |
| GATT   | General Agreement on Tariffs and Trade                               |
| GCC    | Gulf Co-operation Council                                            |
| GEMS   | Global Environmental Monitoring System                               |
| GESAMP | Joint Group of Experts on the Scientific Aspects of Marine Pollution |
| GIS    | geographic information system                                        |
| GRID   | Global Resource Information Data Base                                |
| IAEA   | International Atomic Energy Agency                                   |
| IARC   | International Agency for Research on Cancer                          |
| IAWGD  | Inter-Agency Working Group on Desertification                        |
| IBPGR  | International Board for Plant Genetic Resources                      |
| ICIPE  | International Centre of Insect Physiology and Ecology                |
| ICRAF  | International Council for Research in Agroforestry                   |

|        |                                                                         |
|--------|-------------------------------------------------------------------------|
| ICSI   | International Commission on Snow and Ice                                |
| ICSU   | International Council of Scientific Unions                              |
| IDRC   | International Development Research Centre                               |
| IEO    | Industry and Environment Office (UNEP)                                  |
| IFAD   | International Fund for Agricultural Development                         |
| IGADD  | Intergovernmental Authority on Drought and Desertification              |
| IIASA  | International Institute for Applied Systems Analysis                    |
| IIED   | International Institute for Environment and Development                 |
| ILEC   | International Lake Environment Committee                                |
| ILO    | International Labour Organisation                                       |
| ILRAD  | International Laboratory for Research on Animal Diseases                |
| IMO    | International Maritime Organization                                     |
| IOC    | Intergovernmental Oceanographic Commission, Unesco                      |
| IPCC   | Intergovernmental Panel on Climate Change                               |
| IPCS   | International Programme on Chemical Safety                              |
| IPIECA | International Petroleum Industry Environmental Conservation Association |
| IPU    | Inter-Parliamentary Union                                               |
| IRPTC  | International Register of Potentially Toxic Chemicals                   |
| ISSS   | International Society of Soil Sciences                                  |
| IUCN   | International Union for Conservation of Nature and Natural Resources    |

|        |                                                                       |
|--------|-----------------------------------------------------------------------|
| JPO    | Junior Professional Officer                                           |
| MARC   | Monitoring and Assessment Research Centre,<br>University of London    |
| MIRCEN | Microbiological Resources Centre                                      |
| MSDN   | International Microbial Strain Data Network                           |
| NASA   | National Aeronautics and Space Administration,<br>United States       |
| NFP    | national focal point                                                  |
| NGO    | Non-governmental organization                                         |
| OAU    | Organization of African Unity                                         |
| OECD   | Organisation for Economic Co-operation and<br>Development             |
| PEEM   | Panel of Experts on Environmental Management for<br>Vector Control    |
| PPSC   | Programme and programme support costs                                 |
| ROA    | Regional Office for Africa (UNEP)                                     |
| ROPME  | Regional Organization for the Protection of the<br>Marine Environment |
| SACEP  | South Asia Co-operative Environment Programme                         |
| SADCC  | Southern African Development Co-ordination Conference                 |
| SCOPE  | Scientific Council on Problems of the Environment                     |
| SIDA   | Swedish International Development Authority                           |
| SPC    | South Pacific Commission                                              |
| SPEC   | South Pacific Bureau for Economic Co-operation                        |

|                 |                                                                                |
|-----------------|--------------------------------------------------------------------------------|
| <b>SPREP</b>    | <b>South Pacific Regional Environment Programme</b>                            |
| <b>TFAP</b>     | <b>Tropical Forestry Action Plan</b>                                           |
| <b>TVE</b>      | <b>Television Trust for the Environment</b>                                    |
| <b>UN</b>       | <b>United Nations</b>                                                          |
| <b>UNCRD</b>    | <b>United Nations Centre for Regional Development</b>                          |
| <b>UNCTAD</b>   | <b>United Nations Conference on Trade and Development</b>                      |
| <b>UNDP</b>     | <b>United Nations Development Programme</b>                                    |
| <b>UNDTG</b>    | <b>United Nations Department of Technical Co-operation<br/>for Development</b> |
| <b>UNEP</b>     | <b>United Nations Environment Programme</b>                                    |
| <b>UNEP/COM</b> | <b>USSR Commission for UNEP</b>                                                |
| <b>Unesco</b>   | <b>United Nations Educational, Scientific and Cultural<br/>Organization</b>    |
| <b>UNFPA</b>    | <b>United Nations Population Fund</b>                                          |
| <b>UNCHS</b>    | <b>United Nations Centre for Human Settlements (Habitat)</b>                   |
| <b>UNICEF</b>   | <b>United Nations Children's Fund</b>                                          |
| <b>UNDRO</b>    | <b>Office of the United Nations Disaster Relief<br/>Co-ordinator</b>           |
| <b>UNIDO</b>    | <b>United Nations Industrial Development Organization</b>                      |
| <b>UNSO</b>     | <b>United Nations Sudano-Sahelian Office</b>                                   |
| <b>UNTAG</b>    | <b>United Nations Transition Assistance Group</b>                              |
| <b>WCIP</b>     | <b>World Climate Impact Studies Programme</b>                                  |
| <b>WHO</b>      | <b>World Health Organization</b>                                               |

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**WMO            World Meteorological Organization**

**WRI            World Resources Institute**

**WWF           World-Wide Fund for Nature**

## **Chapter I**

### **THE YEAR IN RETROSPECT**

### The Year in Retrospect

1. If 1988 was "year in which 'environment' became a top item on the world's political agenda" (as I characterized it in my 1988 Annual Report), then - from the environmental standpoint - 1989 was certainly "the year of decision".

2. The year 1989 witnessed an unprecedented number of environmental conferences, meetings, decisions, resolutions, conventions, declarations, communiqués and statements. On the very first day of the year, the Montreal Protocol on Substances that Deplete the Ozone Layer entered into force, only some 15 months after the signing of that Protocol. In early March the Government of the United Kingdom, with the support of UNEP, hosted a "Saving the Ozone Layer Conference" in London. Later in March, at a meeting of Heads of States and Government in the Netherlands, the Hague Declaration on the Environment was adopted. March also saw the adoption and signing of the Basel Convention on the Transboundary Movements of Hazardous Wastes and Their Disposal at an international conference organized by UNEP and hosted by the Government of Switzerland. April witnessed the first meeting of the Contracting Parties of the Vienna Convention and of the Montreal Protocol in Helsinki and the adoption by 81 Governments of the Helsinki Declaration on the Protection of the Ozone Layer.

3. In May, the UNEP Governing Council at its 15th session, held at Nairobi and attended by delegations from 103 Governments, over 40 of which were at the ministerial level, adopted a record number of decisions on the environment.\*/ In June, the African Regional Conference on Environment and Sustainable Development was held in Kampala, Uganda. In July, the Heads of State and Government of the seven major industrialized countries gathered in Paris for a summit meeting at which so much attention was devoted to the environment that the media dubbed it "the green summit".

4. In September, the Government of Japan, supported by UNEP, hosted a conference in Tokyo on the Global Environment and Human Response Towards Sustainable Development. September also

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\*/ See chapter IV for more detailed information on the decisions adopted by the Governing Council at its fifteenth session.

witnessed a summit meeting of the Heads of State or Government of Non-Aligned countries at which great stress was laid on the need for urgent co-operative measures and global impact ensuring a sustainable and environmentally sound development. In his address to the summit meeting, former Indian Prime Minister Gandhi called for the establishment of a Planet Protection Fund to be utilized to conserve the world's resources. Also in September, the General Assembly opened its forty-fourth regular session and the emphasis on the environment in the general debate by almost every Head of State or Government or Foreign Minister who addressed the Assembly was impressive testimony to the fact that environment was a top item on the international agenda.

5. In October, the Commonwealth Heads of Government, meeting in Kuala Lumpur, Malaysia, issued "The Langkawi Declaration on the Environment", which contains a 16-point programme of action to which the 46 leaders present committed themselves. Mid-October witnessed the Conference of Arab Ministers for the Environment, held in Cairo and attended by representatives of some 20 Arab countries. Towards the end of that month, representatives of nearly 130 Governments spoke exclusively on the subject of the environment for an entire week at the United Nations and, in early November, the Prime Minister of the United Kingdom devoted her entire address to the General Assembly to the subject of environment. From mid-October to early November, 35 Governments participated in a meeting on the protection of the environment, held in Sofia, Bulgaria, as part of the process of the Conference on Security and Co-operation in Europe. In early November, the Netherlands hosted a ministerial Conference on Atmospheric Pollution and Climate Change. In December, a World Conference on Preparing for Climate Change was held at Cairo, Egypt, with the support of UNEP.

6. Just before the December holidays, the General Assembly brought its forty-fourth session to a close during which it had adopted nine resolutions specifically addressing environmental issues \*\*/. In one of those resolutions, the Assembly decided to convene in 1992 - 20 years after the Stockholm Conference on the Human Environment - a United Nations Conference on Environment and Development.

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\*\*/ See chapter IV for more detailed information on the nine resolutions.

7. In short, 1989 witnessed a plethora of conventions, declarations, communiqués, decisions, resolutions and statements concerning the environment. No one at the first United Nations Conference on the Human Environment, held in Stockholm in 1972, could ever have imagined or even hoped that in less than two decades, the world's political leadership would be devoting so much time and energy to the subject of the environment.

8. This heightened interest in the environment has been to some extent the result of acumen and foresightedness by the political leadership of the world in guiding the people of our planet towards a better understanding of our human environment; but more largely it has been the peoples of the world, at the grass-roots level - outspoken individuals and non-governmental organizations - who have forced the political leadership of the planet to take the environment much more seriously than ever before. Indeed, concern about the environment is reputed to have been one of the major factors in the political upheavals in Eastern Europe during the last months of 1989.

9. This growing concern for and interest in the environment are encouraging and we at UNEP are justly proud of the part we have played in raising global consciousness about the environment. But lest we be tempted to rest on our laurels, I am duty-bound to point out that, although we may call 1989 the "year of decision" as regards the environment, the decisions have yet to be translated into action. Calls, resolves, declarations and decisions are fine, but they are only the first step. All too often they suffer the fate of well-intentioned resolutions made in the dawn light of the first day of the New Year - only to be forgotten by dusk of the same day. In addition to words, we need deeds!

10. Let us look back a little. Seventeen years ago, the United Nations convened the first Conference on the Human Environment. The Stockholm Conference, as it has come to be known, adopted the Stockholm Declaration on the Human Environment and approved an Action Plan for the Human Environment, both of which were subsequently endorsed by the General Assembly of the United Nations. The secretariat of UNEP was created, a 58 member State Governing Council was established and an Environment Fund was set up. Since that time, thousands of meetings and hundreds of conferences have been held at local, national, sub-regional, regional and global levels - all dealing with the environment.

11. But let us ask ourselves a few questions. Is the quality of the air we breathe today better than that of 17 years ago?

Is the water we drink safer? Have we halted the advance of deforestation, soil erosion, desertification? Have we made inroads towards the eradication of poverty? Are our oceans and seas cleaner? Is our life-sustaining atmosphere less threatened? In short, are we living in a cleaner, healthier and more sustainable environment than that of 17 years ago at the time of the Stockholm Conference?

12. While there have been some gains at the national level in air, land and water pollution clean-up, the sad and discouraging answer to all these questions on the larger plane is "No". The world as a whole is not cleaner or healthier. Deforestation, soil erosion and desertification continue their encroachment unabated. Our atmosphere is threatened not only by the continuing depletion and destruction of the fragile ozone layer, but by the accumulation of greenhouse gases that are expected to start an irrevocable change in our global climate. At the local level, particularly in many of the large urban centres of developing countries, the air is so polluted that it is literally not fit to breathe.

13. In spite of these gloomy facts, I would be the last to say that our efforts over the past 17 years have been in vain. In this context, the words of the late Sir Winston Churchill about the United Nations come to mind: "The United Nations was set up not to get us to heaven, but only to save us from hell." And so it is with UNEP: while our human environment is not better than it was 17 years ago, it is not as bad as it would have been without our efforts.

14. But we must now face up to the fact that efforts directed towards merely slowing down the deterioration of our environment are not enough. Further decline and deterioration may lead us into an irreparable situation. The depletion of the world's protective ozone layer is an illustrative example. In 1987, UNEP called for a 100 per cent phase-out of chlorofluorocarbons (CFCs) that are the principle agents in destroying the ozone layer by the end of the Century. At Montreal, Governments finally agreed to a cut of only 50 per cent after long and tedious negotiations. UNEP was accused of "over reacting" and of being "unrealistic". Now, it is abundantly clear that the measures taken at Montreal were inadequate. Even if the Helsinki Declaration, which was adopted by 81 countries in May 1989 and which calls for a complete phase-out of CFCs by the year 2000 at the latest, were to be put into immediate effect, it would take another 70 years or so for the ozone layer to regenerate itself. The longer ozone depleting substances are released into the atmosphere, the

longer it will take to restore the planet's ozone shield. At some stage, we will reach the point of no return when it will become impossible for the ozone layer to restore itself. Even now, some ecologists are warning that we are already fast approaching this point.

15. No, we can no longer be satisfied by merely abating the rate of our environmental decline. We can no longer watch encroaching deserts invade arable land, forests being denuded, precious topsoil swept into muddy rivers or whipped away by the wind, the pollution of our rivers, lakes and seas, or our oceans being used as global garbage pits. On too many fronts, we are fast approaching the point of no return.

16. It is true that, at present, the state of science does not allow us to identify a given point of no return with any certainty. But this fact should not be allowed to justify inaction on our part. What good will it do to prove beyond a shadow of a doubt that we have passed such a point? Certainly, we must devote much more time and resources to the scientific study of our environment, to understand how it works, how all the various elements interrelate and interact. But this is not enough.

17. This year of decision must now be followed by decades of action. Action calls for more than statements, speeches and declarations. It calls for commitment. Commitment to provide the necessary financial and human resources, commitment to specific actions within specific time-frames, commitment not only to vague ideals, but to very real and basic plans and programmes. Commitments by the North to correct and clean up the damage they have done to the environment. Commitments by the North also to assist the South to combat environmental problems, largely not of their own making, by providing additional resources and technologies. Poverty is the most serious and prevalent environmental problem in the developing countries and without additional resources and funds, there is no hope of developing countries being able to meet the serious threats of environmental degradation.

18. But the South must make commitments too, for the environment is no respecter of persons, countries or boundaries. Governments must commit themselves to the proper management of the natural resource base, and cease mortgaging the future for the present. Developing countries must also in their own interests join the global effort to address ozone depletion, global warming and hazardous waste.

19. Decisive action is necessary to protect the earth's dwindling basic resources - arable soil, fresh water, forests, clean air, etc. - without which even survival is questionable. During our lifetime, we have witnessed the depletion of the ozone layer, seen huge areas of arable land transformed into barren desert, lakes and rivers so polluted and misused that they have become a curse rather than a blessing to humankind, and great tracts of forests turned into denuded countryside. But we have also witnessed miracles. Countries with badly polluted air and water moved ahead with tremendous and successful clean-up programmes. Countries in which, for centuries, starvation was endemic are now not only feeding their population, but exporting excess foodstuffs.

20. We can and must meet the challenge. While the "year of decision" is over, let us hope that, in retrospect, we will see that it ushered in decades of action.

## Chapter II

### THE CO-ORDINATING AND CATALYTIC ROLE OF UNEP

Co-ordination within the UN System

Co-ordination with supporting organizations

Africa

Asia

Europe

Latin America and the Carribean

Western Asia

Committee of international development  
institutions on the environment (CIDIE)

Clearing-house

## THE CO-ORDINATION AND CATALYTIC ROLE OF UNEP

1. In exercising its co-ordinating and catalytic role during 1989, UNEP implemented a host of activities, most of which are described in the following chapter. But even a comprehensive picture of the activities carried out under the Environment Programme reveals only a small part of what UNEP did in 1989 to co-ordinate and catalyse efforts to protect and enhance the human environment. Truth to tell, virtually everything UNEP does - from sessions of its Governing Council, participating in meetings of the Administrative Committee on Co-ordination (ACC) and Designated Officials for Environmental Matters (DOEM), working with and through the UN system, co-operating with IGOs and NGOs, to holding seminars and press conferences - has some element of co-ordinating and/or catalysation.

### CO-ORDINATION WITHIN THE UN SYSTEM

2. The environment received increased attention in the discussions and activities of the UN system in 1989. System-wide co-operation on environmental matters was carried out at the highest level through meetings of ACC, which is chaired by the Secretary-General of the UN, and is composed of the Executive Heads of the specialized agencies, programmes and organizations and of senior officials of the UN secretariat.

3. ACC reports annually to the UNEP Governing Council and is assisted in the preparation of its report by the Executive Director of UNEP, who benefits in performing this function from the DOEM mechanism. At its session in October 1989, ACC considered and approved its report, which will be submitted to the Governing Council at its sixteenth session (UNEP/GC.16/13).

4. The main co-ordination issues in the field of environment considered by ACC in 1989 were sustainable development, including the integration of environmental considerations into development planning and projects, environmental management guidelines, climate change, and the 1992 UN Conference on Environment and Development (UNCED).

5. At its April 1989 meeting, ACC discussed the issue of climate change on the basis of a paper prepared by UNEP for the Senior Officials meeting. ACC agreed on the following possible areas for action by the organizations of the UN system:

(i) identification of critical aspects of their programmes that might be affected by climate change and the inclusion of the consideration of such change in their planning; (ii) identification of programmes that might be strengthened in order to help understand the impact of climate change and develop strategies to limit or adapt to it; (iii) establishment of co-ordinating mechanisms within organizations and the identification of focal points for climate change matters.

6. During 1989, DOEM focused attention on the reporting pursuant to General Assembly resolution 42/186 on the Environmental Perspective to the Year 2000 and Beyond and 42/187 on the Report of the World Commission on Environment and Development.

7. In accordance with paragraph 18 of General Assembly resolution 42/187, the organizations and bodies of the UN system prepared reports on progress made in their organizations towards sustainable development. Further, in accordance with paragraph 10 of General Assembly resolution 42/187, the Secretary-General prepared a report on the review and co-ordination of efforts by organs, organizations and bodies of the UN, which was made available to the Governing Council, as well as to the governing bodies of each of the other organizations and agencies.

8. Further, DOEM considered the proposed UNEP programme budget document for 1990-1991, as well as joint programming activities in the concentration areas of the UNEP programme. DOEM had previously agreed on the usefulness of thematic joint programming exercises. DOEM decided at its September meeting that special attention should be given to the minimization of hazardous wastes in view of the lack of co-ordination machinery in this field.

9. With regard to the evaluation and monitoring of the System-Wide Medium-Term Environment Programme (SWMTEP), DOEM indicated that it would be useful to review in 1991 the progress made in the implementation of SWMTEP. Such a review would focus on two aspects only: an assessment of its value of a programming tool and an evaluation of the degree to which it had influenced the programmes of the UN system.

10. The proposed UN Conference on Environment and Development was discussed on two occasions by DOEM. In respect of the preparatory process for the Conference, DOEM agreed that the UN

system would welcome the opportunity to assist Governments in a co-ordinated manner, and that, in addition, each organization concerned would be initiating its own process of preparation for the Conference.

11. Decision 15/1 of the UNEP Governing Council to mandate the Bureau of its fifteenth session to meet with counterpart organs of specialized agencies and other bodies of the UN system was also discussed by DOEM, which emphasized that the contacts between bureaux should help to develop a more positive and collaborative relationship among the organizations concerned.1/

12. In response to ACC decision 1989/24, DOEM considered a draft report on environmental guidelines and their application to the operational activities of the UN system. DOEM noted the draft report and suggested the title be changed to "Environmental Assessment Guidelines". It was felt that differences among the organizations led to several different methods and types of environmental assessment and guidelines and it was hoped that the final report would manifest a flexible approach that would reflect this diversity adequately.

13. On the issue of integrating environmental considerations into development planning and projects, the Inter-agency Steering Group on the project to assist countries plan for environmentally sound development met in April 1989. DOEM were informed of the outcome of this meeting and of further planning of country actions necessary to the three selected countries. DOEM expressed their interest in being associated with the experiment.

14. The attention of DOEM was drawn to a paper that presented a summary of the views of Governments and organizations on a proposed centre for urgent environmental assistance. DOEM expressed the view that a review of existing systems should be carried out as a first step in a feasibility study. The study should be taken into account in the International Decade for Natural Disaster Reduction (IDNDR).

15. The issue of climate change was also on the agenda at DOEM meetings in 1989. Though there was agreement that greater scope remained for co-operation, DOEM held that existing co-ordination mechanisms were adequate and that no new structures needed to be established.

16. UNEP continued addressing the African crisis with other UN bodies through the Cairo Programme for African Co-operation, the United Nations Programme of Action for African Economic Recovery and Development 1986-1990 and the UN Plan of Action to Combat Desertification. The UN Inter-Agency Working Group for Africa, which has been functioning since 1986, continued to co-ordinate the activities related to the implementation of the Cairo Programme on the environment. The Inter-Agency Working Group held its fourth meeting in Accra in March 1989 to review the status of implementation of the Cairo Programme. A major joint UN inter-agency co-operative exercise was the preparation and convening of the first African Regional Conference on Environment and Sustainable Development, which took place in Kampala, Uganda in June 1989.

17. UNEP co-ordinates the implementation of the Plan of Action to Combat Desertification by organizations of the UN system through the mechanism of the Inter-Agency Working Group on Desertification (IAWGD), which also includes a few international and inter-governmental organizations outside the UN system. In its decision 15/23, the Governing Council requested the IAWGD "to undertake joint inter-agency action to mobilize technical and financial resources to assist national activities to develop and implement national programmes to combat desertification". To enhance its work, as required by this Governing Council decision, IAWGD in 1989 focused on the potential for joint thematic programming exercises, and the group decided that its first such exercise should be the assessment of desertification. Further, measures were taken for better analytical and uniform reporting of the activities of its members to combat desertification; such information would be available through a computer-based data system. It was also considered that joint activities should be carried out at the subregional level and, as a first test case, agencies would collaborate with the Southern African Development Co-ordination Conference (SADCC) in two or three countries.

18. During the year under review, a number of ongoing UNEP projects were being implemented in co-ordination with other UN bodies and agencies, including ECA, ECE, ECLAC, ESCAP, FAO, IAEA, ILO, IMO, UNCHS, UNDTG, Unesco, UNSO, WHO and WMO. Details of UNEP's co-operative efforts with UN agencies and organizations are to be found in the following chapter.

## CO-ORDINATION WITH SUPPORTING ORGANIZATIONS

19. Organizations outside the UN system, both non-governmental and intergovernmental, that work together with UNEP for the implementation of projects and activities are referred to, in UNEP terminology, as "supporting organizations". During the year under review, supporting organizations implemented some 120 ongoing UNEP projects. Further details about UNEP co-operation with supporting organizations, broken down by geographical regions are contained in the following paragraphs.

### AFRICA

20. Throughout 1989, UNEP continued to work closely with 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 1989 in Addis Ababa. Both organizations co-operated to ensure that the Cairo Programme of Action was implemented within the framework of the United Nations Programme of Action for African Economic Recovery and Development. UNEP also co-operated with OAU in matters relating to the transboundary movement of toxic wastes, notably the Basel Convention. UNEP and OAU also prepared a Memorandum of Understanding for providing together secretariat services to the African Ministerial Conference on the Environment (AMCEN).

21. UNEP co-operated with the International Union for Nature and Conservation of Natural Resources (IUCN) in convening the African Women's Assembly on Sustainable Development, held in Harare in February 1989, which led to the establishment of the African Network of Women active in environmental management.

22. During 1989, UNEP also strengthened its ties with SADCC and was represented at the Conference's meetings held during the reporting period. Representatives of the two organizations continued to co-operate closely in the finalization of the Action Plan for the Zambezi River Basin, which was adopted in 1987 as a SADCC programme.

23. In its capacity as the AMCEN Secretariat, UNEP, through its Regional Office for Africa (ROA), continued to assist and co-ordinate the implementation of the Cairo Programme of Action.

24. Within the framework of the Cairo Programme, UNEP, in close co-operation with the Dakar Ministerial Conference on Desertification (COMIDES), convened the first meeting in early

1989 of the AMCEN Committee on Deserts and Arid Lands of AMCEN, in which some 25 African countries participated. During 1989 UNEP co-operated with the member countries of the Indian Ocean Commission in setting up the AMCEN Committee on African Islands Ecosystems which will assist in the management of these ecosystems. The AMCEN Committees on Seas, on Forests and Woodlands, and on River and Lake Basins each met in early 1989. At these meetings, attended by a number of representatives of AMCEN member countries, decisions on priority activities of the Committees were agreed upon.

25. UNEP also took additional measures to bring into effective operation the AMCEN technical co-operation Networks on Water Resources, Energy, Climatology, Environmental Monitoring, Soils and Fertilizers. The Environmental Education and Training Network for Africa was established in 1989. Efforts are currently under way for the establishment of the AMCEN Networks on Genetic Resources and Science and Technology.

26. Throughout the year, increased consultations were translated into support for the implementation of UNEP's programmes in the African region. UNDP Resident Representatives were particularly helpful in launching various components of the Cairo Programme. For example, in Egypt, Ghana, Senegal, Sudan, Togo, Uganda and Zaire, UNDP Resident Representatives demonstrated full support for the pilot programmes of AMCEN aimed at food and energy sufficiency. There was also a significant increase in joint efforts to assist African countries to establish or strengthen their environmental management capabilities, particularly with regard to machinery and legislation. Several countries, such as Madagascar, Mauritius and Rwanda benefited from UN inter-agency co-operation in the preparation of environmental action plans. Special efforts were also made during 1989, in co-operation with UNDP, to address the environmental concerns of Africa's Lusophone countries as well as Spanish-speaking Equatorial Guinea.

27. A significant outcome of the first African Regional Conference on Environment and Sustainable Development, held in Kampala, Uganda, in June 1989, was a decision to augment efforts and support for the implementation of the AMCEN pilot projects, the objective of which is to assist the communities concerned to attain self-sufficiency in food and energy. The Conference also established a continent-wide body of African experts, the African Technical Regional Group, to serve as think-tank for both UNEP and AMCEN in matters relating to the environment.

28. The Conference reaffirmed its commitment to the implementation of the Cairo Programme, which seeks to strengthen co-operation among 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.

29. The Conference also stressed the need for African countries to show greater commitment to the Cairo Programme and invited UNEP to continue to provide technical and financial support to those activities of the Programme selected by the Conference for priority implementation. The Conference further decided that, after 1991, the funding of the Programme should be assumed under a trust fund.

30. Through its Regional Office for Africa, UNEP continued to provide support to the Southern Africa Sub-regional Environment Group (SASREG), a forum for discussing major environmental issues in Southern Africa. The group, which comprises Directors of the Environment in the SADCC member countries, held its fifth meeting in Dar-es-Salaam, Tanzania in April 1989.

31. UNEP, through its Desertification Control Programme Activity Centre and its Regional Office for Africa, continued its co-operation with the Intergovernmental Authority on Drought and Desertification (IGADD). UNEP has consistently sought the involvement of IGADD in activities relating to desertification control particularly those being implemented within the framework of AMCEN and the UN Plan of Action to Combat Desertification.

32. Another significant development in the African region during 1989 was the improvement of co-operative links with the Lake Chad Basin Commission (LCBC). UNEP and LCBC held a number of consultations which resulted, inter alia, in the preparation of a diagnostic study for the environmentally sound management of the Lake Chad Basin. The study, which was completed in November 1989, was co-financed by UNEP, UNDP and UNSO.

33. One of the principal channels through which UNEP works with the NGOs in the African region, is the African NGOs Environment Network (ANEN), which comprises more than 280 African NGOs in 29 countries. During the year under review, UNEP made special efforts to strengthen the co-ordinating role of ANEN and to contribute towards the improvement of its

machinery for information and experience exchange. In close co-operation with ROA, ANEN prepared an updated directory of African NGOs active in the field of environmental management. UNEP also assisted ANEN in the implementation of its outreach programmes and in convening NGO/Government meetings on environment and development. ANEN is also represented in all four AMCEN committees.

#### ASIA

34. Within the context of providing technical advisory services, UNEP activities in Asia and the Pacific region concentrated on three fronts: (i) enhancement of environmental awareness in the countries of the region, both at the governmental and general public levels; (ii) provision of technical co-operation and advice to the Governments of the region on strengthening environmental management capabilities, and (iii) attempts at effective participation of national and regional NGOs in UNEP's areas of concentration. To meet these objectives during 1988 and 1989 UNEP awarded 79 fellowships to nationals of the Asia and Pacific region, covering 39 technical training workshops, symposia and conferences. In addition, UNEP provided technical collaboration/input and consultancies on 41 specific issues.

35. Co-operation with the South Asia Co-operative Environment Programme (SACEP) was continued in a number of areas of common interest including provision of technical input and support in activities related to the South Asian Seas Action Plan, preparation for the fourth and fifth SACEP Governing Councils, the SACEP newsletter and audio-visual material. UNEP actively participated and provided support to the activities of Co-ordinating Body on the Seas of East Asia (COBSEA) and the Association of South-East Asian Nations (ASEAN). On an ad hoc basis, UNEP continued its co-operation with the South Pacific Commission (SPC), the South Pacific Bureau for Economic Co-operation (SPEC), and the South Pacific Regional Environment Programme (SPREP), including participation and provision of technical input to the Fourth South Pacific Conference on Nature Conservation and Protected Areas, held in Vanuatu in September 1989.

36. UNEP continued its co-operation in 1989 with the environmental programmes of the Economic and Social Commission for Asia and the Pacific (ESCAP) and provided input to the preparatory phase of the proposed ESCAP Ministerial Level

Conference on the Environment in Asia and the Pacific, scheduled for 1990.

37. Co-operation with other regional UN organizations included inter-alia: technical inputs into the Regional Worker's Education Training Course on Occupational Safety and Health (ILO); the Regional Training Course for Science Teachers and Supervisors on Environmental Education in the ASEAN Region (Unesco); the First Environment and Sustainable Development Workshop, Pyongyang, Democratic People's Republic of Korea (UNDP); and co-operation with the United Nations University and the Government of Japan in organizing the Asia and Pacific Seminar on the Protection of the Ozone Layer.

38. The first plans were drawn up in 1989 to initiate contact with as many as nine countries of the region to examine, subject to the availability of funds, the possibility of establishing National UNEP Committees.

39. Phase I of the Network for Industrial Environmental Management (NIEM) programme was conducted from February 1987 to March 1989. The short-term goal for the first phase was to demonstrate the viability of the Network prior to full-scale implementation of the NIEM programme, which was achieved through the participation of NIEM members in research studies and information exchange throughout Phase I. Much progress was made in satisfying the two-part, long-term objective, which is to enhance the environmental management capabilities of environmental agencies and industry in countries of the Asia and the Pacific region and to facilitate technical co-operation, assistance and training among countries of the region, as well as with countries in other regions. This progress was evident from the successful completion of the six Phase I field studies, the production of the six manuals and guidelines and the training of personnel and representatives from the seven NIEM countries in the use of the manuals produced. NIEM Phase II is now under way with 17 of 19 proposed field studies being implemented, as well as the production of two training packages for two series of regional conferences and national training workshops.

40. UNEP's Regional Office for Asia and the Pacific (ROAP) facilitated the initiation of a Network of NGOs in the region. Representatives from NGOs in Australia, China, India, Japan, Malaysia, Nepal, the Republic of Korea, and Sri Lanka became involved in a regional exchange of environmental information

subsequently disseminated at the national and grassroots levels. Contacts have been made with NGOs in seven other countries where invitations to participate in the Regional Network will follow the formation of national coalitions.

41. In collaboration with USAID, ESCAP, the World Bank, the Asian Development Bank, the World Resources Institute and the WWF-US, UNEP convened a high-level Consultative Meeting on the Conservation of Critical Ecosystems and Economic Development in November 1989, to identify ways to encourage bilateral and multilateral investment for the conservation of such ecosystems in the region.

#### EUROPE

42. As mentioned in the 1988 Annual Report, the UNEP Regional Office for Europe (ROE), in co-operation with the Government of the Netherlands, initiated a technical co-operation project for the creation of an environmental inspectorate in Portugal to oversee the application of environmental legislation and regulations. During 1989, a major co-operation task of ROE was the execution of the training programme of eight Portuguese Inspectors. The programme consisted of (i) group training in the Netherlands at the central and regional levels in activities of the Dutch State Health Inspectorate, as well as in several industries that carry out important pollution abatement programmes; and (ii) in situ training in Portugal in the industrial area of Estarreja on the subjects of risk assessment, air pollution, soil pollution, water pollution and waste management, with the assistance of Dutch inspectors expert in these subjects.

43. During 1988 and 1989, ROE provided fellowships to twenty-two participants from seven countries of the region (Cyprus, Greece, Hungary, Malta, Portugal, Turkey and Yugoslavia) to attend several environmentally related conferences, seminars, workshops and symposia.

44. UNEP continued to follow the activities of the Organization for Economic Co-operation and Development (OECD), especially those of its Environment Committee and Development Assistance Committee. UNEP also participated actively in the work of the OECD Development Assistance Committee's (DAC) Working Party on Environment and Development, which is seeking to find more and better ways to integrate environmental considerations into the work of the participating development

assistance agencies. ROE continued to play an active role with regard to the issues of the transfrontier movements of hazardous wastes, of accidents involving hazardous substances and of global climate change. UNEP also followed closely the work of the Waste Management Group and the Chemical Group of OECD.

45. UNEP maintained its co-operation with the Council of Mutual Economic Assistance (CMEA) throughout the year under review. In April 1989 the Standing Commission on Co-operation in Environmental Protection (established in 1987, held its second session in Dashanbe, USSR. At that meeting, the CMEA member countries approved a "Strategy in the Field of Environmental Protection to the Year 2010", as well as their programmes of co-operation in this field for the period 1986-1990. The main aims of the Strategy deal with ecological security, good living conditions, health for present and future generations, as well as the conservation of the biosphere and rational use of natural resources.

#### LATIN AMERICA AND THE CARRIBEAN

46. Through its Regional Office for Latin America and the Caribbean (ROLAC), UNEP in co-operation with the Government of Brazil, convened in 1989 the Sixth Ministerial Meeting on Environmental Matters in Latin America and the Caribbean. The main results of the Meeting were the formulation of the Declaration of Brasilia in which the Ministers of State in charge of the environmental affairs proclaimed their recognition that the urgent need to find a balance between socio-economic development and environmental protection and conservation through sound management of natural resources and control of environmental impacts was a common concern of the highest priority to the countries of the region. The Meeting requested the development, on a priority basis, of a comprehensive action plan for environmental management in the region, aimed at strengthening the Regional Co-operation System on the Environment. The Action Plan will, in particular, facilitate the implementation of regional agreements; guarantee continuous information exchange on global programmes with direct regional implications; incorporate decisions of regional intergovernmental meetings into the UN System-Wide Medium-Term Environment Programmes, as well as into UNEP's programme and budget; co-ordinate environmental management activities undertaken in the region by international multilateral and bilateral organizations; and analyze global environmental

problems and their possible impact on the region in order to formulate appropriate and concerted responses.

47. This Action Plan will be presented the Governments of the region for its adoption at the Seventh Ministerial Meeting on the Environment, to be held in Saint Lucia, in October 1990. For the preparation of this Plan, a "Core Group" composed of UNDP, ECLAC, the World Bank and the Inter-American Development Bank was established to hold close consultations with UNEP and other UN bodies, with regional and subregional intergovernmental bodies, and with Governments of the region.

48. Throughout 1989, UNEP, through ROLAC, in co-operation with Governments and appropriate regional bodies, continued the implementation of the principal umbrella projects of regional programmes of common interest, including development planning and environment (with ECLAC); environmental legislation and institutional frameworks (internal); environmental education (with Unesco); protection and conservation of the natural and cultural heritage and protected areas (with FAO); and natural potential and rational management of tropical and subtropical forest ecosystems (with the Centro Agronomico Tropical de Investigación y Enseñanza (CATIE)).

49. In the field of environmental training, UNEP, through the Network's Co-ordination Unit, which was established at ROLAC, continued in 1989 the co-ordination of the Network's activities, particularly the incorporation of the non-Spanish-speaking nations of the Caribbean into the Network Programme, and liaison with international financial agencies and institutions to obtain resources and technical collaboration for the implementation of environmental training programmes and activities. During the Sixth Ministerial Meeting on the Environment in Latin America and the Caribbean, the Governments of the region decided to establish the Network's Trust Fund with regular annual contributions to finance the Network's Co-ordination Unit and activities. The Meeting also approved the Network's Rules of Procedure to regulate and co-ordinate its operations.

50. Following Governing Council decision 14/21, in which the Council requested the Executive Director to "support the work of the Contact Group of the headquarters of the regional office for Latin America and the Caribbean of the United Nations Environment Programme in conformity with the interest shown by the Governments in the region as reflected by the final report

of the Fifth Intergovernmental Regional Meeting", UNEP/ROLAC convened three meetings of the Contact Group during 1989, which allowed for the strengthening of the institutional framework of the Regional Co-operation System and for ensuring permanent communication between the Governments of the region and the Secretariat.

#### WESTERN ASIA

51. A senior-level meeting between UNEP and ESCWA was held in November 1989, which resulted in a Memorandum of Understanding delineating the areas for co-operation with specific subject areas for priority action. Among the areas covered were: water, energy, land degradation and desertification, development planning, industrial development, social development, population and human settlements, and transportation and communication. The UNEP Regional Office for Western Asia (ROWA) also co-operated with the Arab Centre for the Studies of Arid Zones and Dry Lands (ACSAD) in assisting the Council of Arab Ministers Responsible for Environment (CAMRE) to implement the programme to combat desertification and extend the green area in the Arab world.

52. The efforts of ROWA with regard to UNEP's regional seas programme in the Red Sea and the Gulf of Aden region resulted in Egypt's taking steps for accession to the Red Sea and Gulf of Aden Environment Programme. Egypt hosted an expert group meeting in Alexandria in November 1989 on co-ordination modalities among reception facilities at Red Sea ports.

53. Among the numerous national plans of action to combat desertification prepared with UNEP assistance, several variations in the presentation of the formulated plans were noticed. To achieve conformity, a UNEP consultant studied and analysed the plans for Jordan, Sudan, Syria, Tunis and the Yemen Arab Republic, as well as all other documents relevant to the national plans of action. As a result, new guidelines for the formulation of national plans were established. Also during the year, the national plan of action to combat desertification for Iraq was finalized. Great progress was achieved in the implementation of the project "Combating Desertification and Extending the Green Area in the Arab World", which is executed by CAMRE with the assistance of UNEP/ROWA.

54. ROWA, in co-operation with UNEP's Industry and Environment Office, convened a regional workshop in Bahrain in December 1989 on Hazardous Waste Management Policies and Control

Options. The workshop was attended by representatives from Bahrain, Egypt, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, the Syrian Arab Republic, United Arab Emirates and the Yemen Arab Republic. Representatives from industries and universities in the region and the Gulf Co-operation Council (GCC) also participated. The workshop discussed waste and environmental assessments, technologies for hazardous waste treatment and disposal, legal and administrative considerations and the evolution of hazardous waste management strategies.

55. Also in co-operation with the Industry and Environment Office, and with the support of the Environmental Protection Committee in Bahrain, ROWA convened a workshop in November for the introduction of the programme of Awareness and Preparedness for Emergencies at Local Level (APELL). The workshop was well attended by representatives from industry, civil defence and other related institutions in Bahrain.

56. UNEP/ROWA has extended assistance to UNDP offices in the region for the convening of a series of workshops on Environment and Sustainable Development. During 1989, national workshops were convened in six countries in the region: Bahrain, Iraq, Jordan, Oman, Qatar and the People's Democratic Republic of Yemen.

57. UNEP/ROWA technical assistance was also extended to the newly-established National Environment Committee for UNEP of the Syrian Arab Republic, and activated the establishment of a national committee in Jordan.

58. The co-operation between UNEP/ROWA and CAMRE for the implementation of their work programmes regarding, in particular, combating desertification and industrial pollution, and the promotion of public environmental awareness was continued during 1989. UNEP participated in a workshop on combating desertification in the Arab world, held in Tunis in September 1989.

#### COMMITTEE OF INTERNATIONAL DEVELOPMENT INSTITUTIONS ON THE ENVIRONMENT (CIDIE)

59. CIDIE held its tenth annual meeting at the Headquarters of the Asian Development Bank in Manila in June 1989. Some 20 delegates from 15 multilateral development/finance institutions and 60 observers from intergovernmental, bilateral, and non-governmental organizations took part in the meeting. In an

opening signing ceremony, the World Food Programme formally subscribed to the 1980 CIDIE Declaration of Environmental Policies and Procedures Related to Economic Development and thus became the Committee's fifteenth member.

60. CIDIE had been formed in 1980 to help member institutions make their operations progressively more responsive to the opportunities and constraints of the natural environment through the establishment of effective environmental policies and procedures in their development assistance activities. Initially, eight multilateral development/finance institutions and UNEP signed the Committee's Declaration of Principles, which commits them to examine their activities so as to minimize environmental damage; to incorporate environmental measures into activity design and implementation and at the same time help develop member country capacities; to consider proposals to enhance the environment and quality of life; to support staff training and information; and to initiate and co-operate in studies and methodologies in support of environmental aspects of development. The CIDIE Secretariat is located at the Nairobi, Kenya, Headquarters of UNEP.

61. By 1989 15 multilateral development institutions had subscribed to the CIDIE principles and had become full members of the Committee: the African Development Bank (AfDB), the Arab Bank for Economic Development in Africa (BADEA), the Asian Development Bank (AsDB), the Caribbean Development Bank (CARIBANK), the Central American Bank for Economic Integration (CABEI), the Commission of the European Communities (CEC), the European Investment Bank (EIB), the Inter-American Development Bank (IDB), the International Fund for Agricultural Development (IFAD), the Nordic Investment Bank (NIB), the Organization of American States (OAS), UNDP, UNEP, the World Bank, and the World Food Programme (WFP). The Food and Agriculture Organization of the United Nations (FAO) will join in 1990. CIDIE members meet annually to report progress in the implementation of the Declaration of Principles, to review a wide range of current environmental management questions, and to consider plans for common action within the framework of the member institutions' mandates and capabilities.

62. The 1989 progress reports revealed several important trends in the way members have come to address environmental issues: CIDIE members are generally increasing their staff with environmental planning and management responsibilities and environmental activities are shifting from central project

review to support activities within decentralized projects. Policies and procedures move from project-by-project approaches to cross-sectoral, area-wide, and long-range strategies, from impact assessment and mitigation to resource management and conflict resolution, from evaluating completed project designs to technical support throughout the project cycle. Technical assistance is shifting from direct support to capacity-building, from co-operation primarily with central Governments to greater involvement of local governments, the private sector, NGOs and other grassroots voluntary organizations. Typical government requests for assistance reflect increasingly broader approaches, moving from requests for technical solutions of various issues to requests for advice on policy procedures, implementation mechanisms, and institutional strengthening. There is also much more concern about transfrontier and global issues.

63. Among the substantive environmental issues discussed during the 1989 meeting were the role of environmental information in development management, regional environmental planning and management, sustainable agricultural development, methods for setting responsive environmental quality standards, the role of NGOs and the implications of global environmental issues. The participants acknowledged that urgent steps were needed to combat global warming, protect the ozone layer, manage shared fresh water resources and coastal areas, and control hazardous wastes and toxic chemicals. The Committee agreed that global issues must now be a part of CIDIE's agenda and they requested UNEP, through the Secretariat to report regularly to them on global issues and their operational implications for member institutions. They recommended that global issues be discussed at the 1990 meeting.

64. The Committee also decided at its 1989 meeting to co-operate closely with the newly created OECD-DAC Working Party on Development Assistance and the Environment. The Working Party is in many respects the bilateral counterpart of CIDIE and the Secretariat was given the task of exploiting the "commonalities of interest and the complementarity of means" that characterize the relationship between the two mechanisms. In addition, the Committee re-affirmed its commitment to information-sharing among the members and requested the Secretariat to promote more formal and effective mechanisms to that end. The members generally expressed their willingness to make CIDIE an even more powerful and effective mechanism to help multilateral funding institutions face the environmental challenges of the 1990s.

65. UNEP responded to the new demands placed on the CIDIE mechanisms by expanding the Secretariat's capacities and resources. In mid-1989 a senior staff member was recruited as CIDIE Co-ordinator and the budget of the Secretariat was almost tripled from its 1988 level to facilitate programming meetings with members and the preparation of well structured, focused, and productive interactions.

#### CLEARING-HOUSE

66. UNEP's Clearing-house mechanism, which was established to act as a bridge between developing countries and potential donors, functions as an integrated part of UNEP's co-ordinating and catalytic role to assist developing countries in their efforts to deal with their environmental problems and to help them secure the financial and technical resources needed for this purpose.

67. In 1989, in order to respond to requests for co-operation in establishing and strengthening various elements of environmental policy, legislative and regulatory frameworks and adequate, well co-ordinated institutional capabilities, UNEP established an umbrella project with funds provided through the Clearing-house from Finland, the Federal Republic of Germany and Sweden. Under the project activities have been undertaken in Burundi, Guinea, Guyana, Mozambique, Nepal, Rwanda, Swaziland and Viet Nam. Further, within this field of work, assistance was also provided to Yemen Arab Republic to finalize its activities on strengthening environmental institutions and environmental health programmes, as well as providing a consultancy on environmental legislation related to industrial licensing.

68. Through UNEP's Clearing-house unit, a mission was dispatched to Mozambique in 1988 to review the environmental situation in the country. The mission's report contained recommendations to formulate a comprehensive policy and strategy for environmental improvements. As a follow-up in 1989, the Government of Mozambique and UNEP formulated a Memorandum of Understanding specifying the content and scope of co-operation with a view to strengthening the country's capabilities to identify, monitor and manage the environmental dimensions of its development process. A pivotal element of the programme of co-operation is the establishment of a provisional environmental secretariat to provide the basic technical and administrative support required to render the National

Environmental Planning Commission operational. During the initial phase of the project, a National Environmental Management Programme (NEMP) will be formulated and the main environmental challenges faced by Mozambique will be identified.

69. In June 1989, the Government of Portugal and UNEP convened a consultative meeting to consider environmental issues of serious concern to Africa's Lusophone countries (Angola, Cape Verde, Guinea Bissau, Mozambique, and Sao Tome and Principe) as well as Spanish-speaking Equatorial Guinea. At the workshop, each country presented a Status Report on the Environment, as well as an Outline of Major National Environmental Issues. In view of the environmental problems faced and their constraint on sustainable development, it was agreed at the meeting to develop an umbrella project containing sub-projects for each individual country specifying their respective needs. The project will strengthen the countries' environmental management capacities through redirection of policies and programmes, strengthening of institutional mechanisms and reinforcement of legislation. UNEP was requested to provide consultancy services to facilitate the preparation of the proposed umbrella project. These services were funded through the Clearing-house with funds obtained from the Government of Sweden. In 1989, UNEP's Clearing-house arranged the financing of activities in Viet Nam to investigate the impact of climate variability and climate change on various climate-sensitive sectors, with a view to stimulating awareness on climate impact assessment and developing a multidisciplinary research team that would enable the integration of climate impact assessment into the economic and environmental planning in Viet Nam. Further, in response to a request from the Maldives for assistance in connection with the potential impacts of expected climate changes, the Clearing-house unit facilitated a mission to prepare a proposal for an in-depth study of the potential impact of expected climatic changes (primarily sea level and temperature rise) on the natural environment and the socioeconomic structures and activities of the Maldives. In addition, as part of the special in-depth studies required for related individual sections, it was agreed with the Government to undertake a mission in December 1989 to review the existing in-country capabilities in the field of oceanography and hydrography, including identification of systems and manpower in order to integrate these functions into existing organizational structures.

70. In 1989, with support of funds obtained through the Clearing-house mechanism, training workshops on hazardous waste

strategies were held in Bahrain and Bangkok. The workshops are particularly important as part of UNEP initiatives to assist national authorities in their drive to develop and strengthen waste control and management. They also form part of UNEP's institution and capacity-building efforts. The workshops are being organized jointly by the UNEP's Industry and Environment Office and the respective UNEP Regional Offices. The objectives of the workshops are to advise on policy matters related to management of hazardous waste and to provide substantive information to enable national authorities to identify treatment methods best applicable to their needs, as well as the infrastructure required to allow treatment facilities to operate effectively. In addition, the workshops provide opportunities for participants to co-operate in case-study projects designed to stimulate practical approaches to land-based disposal problems. The workshops are also encouraging network-building among the participants.

71. As part of the Cairo Programme, initiated in 1985 by AMCEN and aimed at assisting African countries in the formulation of pilot projects for environmentally sound development in rural and pastoral areas, a project review mission, financed through the Clearing-house mechanism, was undertaken to Chad in November 1989. The mission reviewed three selected areas and identified the scope of activities that would promote self-sufficiency in food and energy by using the traditional skills and experience of the local villagers and pastoral people in economically feasible, environmentally sound and socially acceptable development. The mission concluded that the three zones proposed were appropriate for the implementation of the village pilot projects, as envisaged within the framework of AMCEN. It was recommended that activities in the three areas become part of an umbrella project to facilitate the mobilization of funds, reduce project management costs, facilitate follow-up and provide uniformity in approach and assessment of actions.

72. As a follow-up to Governing Council decision 14/9, B, requesting the Executive Director to prepare a State-of-the-Environment report" reflecting emerging environmental issues, a substantial multi-national study of public and leadership attitudes to environmental problems was conducted in 14 countries in the five geographic regions. The survey was funded partly through the Clearing-house with a financial contribution from the Federal Republic of Germany.

73. To build awareness in developing countries on important environmental issues, UNEP's Clearing-house provided assistance in the projection of three TV-spots focusing on specific environmental problems such as afforestation, ozone layer depletion and water pollution and management. The spots, one minute each, were produced in three languages (English, French and Spanish) and are being distributed to all countries in Africa for use in their respective national networks. The pilot project will be replicated in other regions as soon as conditions permit.

74. Responding to the concern of the Philippines about the degradation of the Manila Bay Basin, efforts are being made by the national bodies involved, with assistance from some international agencies, to study the nature and scope of the problems and to identify remedial and preventive measures. These initiatives are, however, limited only to parts of the basin area. With funds obtained through UNEP's Clearing-house, the preparation for the first phase of the Manila Bay River's Rehabilitation Programme was initiated in 1989. During this first phase assistance will be provided to the Government in the identification of the main environmental challenges currently being faced. Collection, analysis and synthesis of available information on the environmental situation in the Manila Bay River drainage area will be used to catalyse further debate on the content of a basin-wide rehabilitation programme and the establishment of a common strategy.

75. In December 1989, Finnish Government officials visited UNEP in order to review and discuss collaboration between FINNIDA and UNEP. The visit was highly successful and provided the opportunity for in-depth discussions on specific selected issues, including past and future collaboration. A compendium of project proposals had been presented to the Finnish authorities prior to the visit and the Government of Finland pledged a contribution of approximately US\$750,000 for UNEP Clearing-house activities to be undertaken in 1990.

## NOTE

- 1 A report on the meetings of the UNEP Governing Council Bureau with the bureaux of counterpart organizations and agencies is being submitted to the Council at its sixteenth session in document UNEP/GC.16/Inf.2.

### CHAPTER III

#### THE ENVIRONMENT PROGRAMME

Monitoring and assessment

Information exchange

Oceans and coastal areas

Water

Terrestrial ecosystems management

Desertification control

Environmental health (including agricultural chemicals)

Peace, security and the environment

Technology and environment

Support measures

Technical and regional co-operation

Evaluation and follow-up

## THE ENVIRONMENT PROGRAMME

1. The report for 1989, as was the case with the 1988 Annual Report, adheres to the administrative structure of the programme by following the presentation of the approved programme budget for 1988-1989 (UNEP/GC.14/16 and Corr. 1). The basic structure continues to be as approved at the Stockholm Conference, comprising three separate, yet mutually supportive clusters of activities: environmental assessment (Earthwatch); environmental management; and support.

2. As 1989 marked the close of the biennium 1988-1989, the present report highlights the main activities during that period, some of which build on activities already reported in the 1988 Annual Report. Of special relevance is annex III to the present report which shows, beside each activity of UNEP's approved Programme Budget for the biennium 1988-1989 (UNEP/GC.14/16), the project(s) through which the activity was carried out. More detailed information on the implementation of individual projects is available upon request. Information to supplement that provided in this chapter may be found in the Report on New Projects 1989 and the UNEP Evaluation Report 1989. The current report also attempts to focus on achievements within the areas of concentration approved by the UNEP Governing Council at its fifteenth session in its decision 15/1. The programme is expected to concentrate on these areas during the biennium 1990-1991. In the interest of brevity, no attempt is made to provide a comprehensive report on all the activities of the programme in 1989. Rather, the overview given in the following pages is presented with a view to providing the reader with a general outline of the scope and content of the work of UNEP's programme in 1989. It should be borne in mind that, although an activity is described under a specific budget line, many units and parts of the secretariat may have been included in the implementation of that activity. The increased number of multiline projects within the programme testifies to the increased internal co-ordination of the activities of UNEP.

## EARTHWATCH

3. The process of "Earthwatching" is taking on a more vital role as the world's attention is drawn more and more to problems of the environment. The fundamental Earthwatch cycle - extracting information on the state of and trends in the environment, putting the data into useful and usable forms, and

getting the processed information back to the managers and decision makers who need it - is now routine in the Earthwatch elements: GEMS and GRID, IRPTC and INFOTERRA. The challenge to Earthwatch, as we hear repeatedly, for example, from the modellers and policy makers concerned with climate change, is how best to diminish the uncertainties inherent in most of the environmental information we have at hand.

#### MONITORING AND ASSESSMENT (Budget line 11)

The Global Environmental Monitoring System (GEMS) (Budget subline 111)

4. The main mission of the GEMS Programme Activity Centre (GEMS/PAC) is the co-ordination of environmental data collection at global, regional and national levels and the production of relevant and timely information for those who husband natural resources and the environment.

5. The growing demand for good environmental information and assessments has led to much thinking about reshaping the monitoring and assessment machinery of GEMS. The concept of GEMS was, after all, first developed two decades ago, even before Stockholm. The organization and first workplans of a GEMS Programme Activity Centre were put together fifteen years ago, in 1974. Out of the 1980s will emerge a reshaped, more efficient GEMS, ready to meet the demands of 1992 and beyond.

6. In conformity with its mandate, GEMS works along the lines of monitoring, data management and assessment: monitoring, to generate the necessary information; data management, to put the information into usable forms; assessments, to provide the bases for action.

Environmental monitoring

Renewable resource monitoring

7. Within the framework of the African Ministerial Conference on the Environment (AMCEN), GEMS/PAC has continued to co-ordinate activities related to environmental monitoring in Africa. A number of African countries were visited in 1989 in order to ascertain their needs for the establishment or strengthening of resource monitoring and assessment capabilities. In Guinea and Mali specific proposals were formulated for which funding is being sought from external

sources. The donation of computer equipment by IBM to UNEP for use by GRID has catalysed a programme to create a network of sub-regional and national geographic information system (GIS) centres across Africa which will form the nucleus for national environment monitoring and assessment centres. The objective of the programme is to install fully operational GIS capabilities and satellite image processing systems (IPS), along with trained personnel. To realize these objectives, at least three countries from each of five sub-regional groupings - the Southern African Development Co-ordination Conference (SADCC), the Intergovernmental Authority on Drought and Development (IGADD), the Permanent Inter-State Committee for Drought Control in the Sahelian Zone (CILSS), the Mahgreb, and West/Central Africa - are being invited to join the programme. Within each sub-region, countries are being asked to identify a suitable institution in which to install GIS and IPS capabilities. Subsequently, three months of training in GIS and IPS methods will be provided to resource managers from the sub-regional and national institutions. After the training course, an IBM PS2/80 micro-computer with GRID-compatible software will be installed in the selected institutions. Finally, technical assistance will be provided for the newly formed centres to implement their first national pilot project.

8. Each training cycle aims to create an operational sub-regional network with links to GRID. Resource managers from a sub-regional grouping and from three or four of its member countries will be trained together as an operational unit. Each of the institutions with GIS and IPS capabilities will therefore eventually form the nucleus for a national monitoring system and, by exchanging data with the regional, sub-regional and global databases of GRID, will become part of both the AMCEN environmental monitoring network and the network of GRID nodes. The first training cycle started in August 1989. By the end of 1989, the computers had been installed in Ghana, Lesotho and Uganda and the pilot projects will be completed by mid-1990. A further five training cycles are planned, two per year starting in 1990.

9. UNEP, FAO, the EEC, NASA and other partners from universities and private research institutes are developing a satellite-based methodology, using the analytical capabilities of GRID, to support global forest assessment, with the centres of gravity now in West Africa and Amazonia. This is a fast and cost-effective method for first-time mapping and subsequent monitoring of forest resources - as an important environmental

factor - on regional, continental and global scales. The FAO approach to the 1990 global forest assessment is complementary to the satellite-based studies. FAO's country-by-country strategy typically employs two-stage sampling surveys using satellite remote sensing and field control. This produces reliable timber inventory estimates, and at the same time, can accommodate the variable conditions of tropical countries. Obviously, the wall-to-wall mapping done by UNEP is useful in providing a forest/non-forest stratification which can subsequently reduce the costs of sampling surveys conducted by FAO.

### Environmental pollution

10. In 1989, the GEMS/Environmental Pollution programmes, in co-operation with other UN agencies and national institutes, continued the routine monitoring of the major environmental pollutants in urban air, food and freshwater bodies and to assess the actual exposure of man to environmental pollutants. In accordance with the recommendations of the Government-designated experts who reviewed the GEMS/Environmental Pollution programmes in 1988 and the findings of the 1988 global assessments of the quality of urban air, fresh water and food, a major reorientation of the GEMS/Environmental Pollution Programmes was initiated during 1989. While the strengthening of monitoring capabilities in developing countries remains a major thrust, more emphasis is placed on the assessment aspect of the programmes and on improving the representativeness and comparability of monitoring data on a global or regional scale. The wide and timely dissemination of relevant information to Governments, appropriate institutions and the general public on the levels, trends and cause/effect relations of environmental pollutants is of prime importance.

### Global fresh water quality

11. The GEMS/WATER programme was revised in 1989. The new programme aims to set up a select global network of strategically sited monitoring stations in the major water basins of the world. The network will include four types of monitoring stations: (a) baseline stations, selected to determine ambient water quality and to monitor trends in climate change and long-range transport of toxic and acidic contaminants; (b) rivermouth stations, combining hydrometric and water quality monitoring, to determine annual fluxes of

critical pollutants to oceans and regional seas; (c) trend stations, located in the interior of major river basins and lakes, to monitor long-term changes in water quality in relation to industrial, agricultural and municipal pollution and various land uses; and (d) ground water stations, to begin operation in the mid-1990s, to monitor trends in contamination of major aquifers by toxic chemicals, salts, nutrients and municipal effluents. The programme is actively seeking increased co-operation with other programmes such as the Environmentally Sound Management of Inland Waters (EMINWA), the International Lake Environment Committee, and the Global Runoff Data Centre of WMO.

12. In order to produce scientifically sound assessments efficiently, a strong link is being established with a centre of expertise at the National Water Research Institute, Environment Canada, with a co-ordinating role vested in the Monitoring and Assessment Research Centre (MARC) in London. These centres are responsible for compiling comprehensive global assessments every five years, biennial reports on specific global water quality issues, an annual review of the GEMS/WATER network data and yearly trend evaluations and general information leaflets to increase awareness of global fresh water pollution.

13. Global freshwater quality: a first assessment was published by the programme in 1989. A second edition of the Unesco/UNEP/WHO Guidelines on the interpretation of water quality monitoring data is under preparation for 1990.

#### Urban air quality

14. In order to improve the relevance and performance of the GEMS/AIR programme, the representativeness of the participating monitoring stations was evaluated and the data-handling procedure reviewed. The possibilities of monitoring a number of further pollutants, such as ozone and nitrogen oxides, are being studied. A systematic collection of national and regional data on urban air pollution and of additional data on emission, climate, population distribution and other factors was initiated to provide a wider basis for interpretation of urban air quality assessments. A data summary listing will be available by the end of 1990. From then onwards, the data collection system will be changed, where relevant, to the collection of annual summaries of daily data, and the manual submission of data will be phased out in favour of electronic data transmission.

### Food contamination monitoring programme

15. A sixth round of data collection (food contamination data for the year 1986 to 1988) was carried out, and the sixth international analytical quality assurance exercise for heavy metals, organochlorine compounds and mycotoxins was continued. The programme continued to contribute to and participate in the regular meetings of the Codex Alimentarius Commissions. In collaboration with the Codex Committee on Pesticide Residues, the programme published Guidelines for Predicting Dietary Intake of Pesticide Residues. In co-operation with the Codex Committee on Food Additives, Guidelines for Simple Evaluation of Good Additives Intake were developed. A technical mission to China assisted in training in dietary intake studies and a fact-finding mission took place in Kenya. In future, the programme will be directed towards a selected number of contaminants and associated food items that are most important to human health and international trade, as well as those that serve as indicators of environmental contamination. Regional collaborating centres will be established to overview the data collection and technical co-operation.

### Human Exposure Assessment Locations (HEALs)

16. Reports on the three completed HEALs pilot studies were published in 1989 and results presented at the first major international conference on the emerging discipline of human exposure assessment. The pilot studies were conducted in seven countries and assessed human exposure to three groups of chemicals: heavy metals, organochlorine compounds and nitrogen oxides. The pilot phase successfully demonstrated the possibility of co-ordinating human exposure studies, exchanging information and transferring technology at an international level. The HEALs programme has now engaged in its full operational phase, calling for twelve to fifteen countries to conduct two or three monitoring projects simultaneously. Guidelines on sampling and statistical analysis of human exposure monitoring data are under preparation. An information exchange network has been set up.

### Long-range transboundary pollution monitoring

17. For a number of years UNEP, through GEMS, has been working on the monitoring and assessment of impacts of environmental contaminants that are blown across country boundaries, particularly the acidifying effluents of industrial production.

The work continued during 1989 and, at the request of the Commission of the European Communities (EEC), representatives of Programme Co-ordinating Center (PCC) West participated in several liaison meetings with the EEC Forestry Section, in order to ensure harmonization of survey procedures. Ground surveys are being repeated at yearly intervals, so that a medium-term assessment of air pollution effects on forests in Europe can be ready by 1990.

18. The 1988 survey of European forests, published in 1989 and co-ordinated by ECE, covered some 65%, or 108 of the 161 million hectares of European forest (excluding most of the forest in the USSR). Nearly one million individual trees in over 50,000 sample plots were assessed. The survey has gone far in harmonizing survey methods so that results may be compared between the twenty-five participating countries.

19. Forest damage, expressed as loss of needles or leaves, has been observed to a greater or lesser degree in all countries. Considering both conifers and broad-leaved trees, defoliation is lowest in Austria, Bulgaria, France, Hungary, Bolzano (Italy), Portugal, Spain and Lithuania (USSR). It is highest in Czechoslovakia, Poland, and the United Kingdom. Ten countries consider air pollution to be the major destabilizing factor of forest health; the remaining countries grant that air pollution is one factor that contributes to the weakening of forests and leaves them more vulnerable to other agents. Spruce, fir and oak are, in general, most at risk, particularly old stands at higher elevations.

20. Both Programme Co-ordinating Centres (East and West) organized international training courses on forest damage assessment, and all countries agree that there is a clear need for continued monitoring to keep close track of a highly dynamic situation. However, if concurrent pollution abatement measures are not introduced, the monitoring will be largely academic.

#### Integrated monitoring

21. During 1989, efforts continued to bring together the existing integrated monitoring activities in the CMEA countries, the existing GEMS activities, plus those being developed by the Parties within the framework of the Convention on Long-range Transboundary Air Pollution in order to form the nucleus of a GEMS network for integrated monitoring. A workshop

was held in Czechoslovakia in the last quarter of 1989 with representatives of both the ECE programme for integrated monitoring under the Convention and the CMEA integrated monitoring programme. The workshop concluded that there was a need for further discussions on setting up a GEMS global network for integrated monitoring.

#### Oceans monitoring

22. The oceans component of GEMS is co-ordinated and implemented by the UNEP Oceans and Coastal Areas Programme Activity Centre (OCA/PAC) (see paragraphs 90-113).

#### Environmental data management

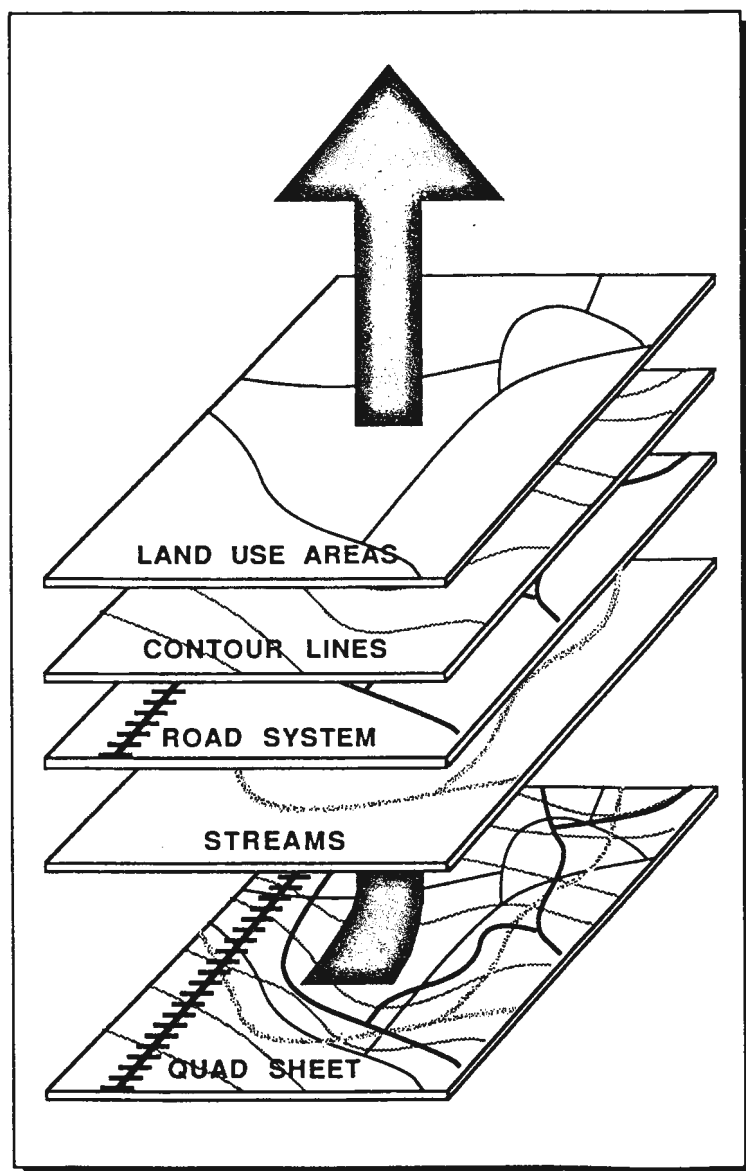
#### GRID, the Global Resource Information Database

23. UNEP's Global Resource Information Database (GRID) continues to fill a unique niche in the Environment Programme, with three support services: provision of global, regional and, in some cases, national environmental data in usable forms; access for co-operating agencies to GIS and satellite image processing "toolboxes" at one of the GRID centres; and training for experts from developing countries in GRID technology and applications. GRID aims to be a networked environmental data supply and management support service for the Environment Programme.

24. GRID is a computer system that organizes, analyses and stores environmental data collected from around the world, and converts it into useful, easily accessible information. A computer software system uses geographic location as the common denominator, integrating data from diverse sources to produce the information in the form of maps, tables and images on the screen. It goes beyond simply describing the concentration and distribution of resources, allowing analysis of the interaction of a large number of environmental variables. These may include political and natural boundaries, altitude, soils, vegetation, rainfall, weather anomalies, ozone, population density, endangered species, protected areas and many others (see Figure 1).

**Figure 1**

**GRID mixes physical, biological and human variables, depicting each one's reaction with the others**



25. During 1989, the GRID network grew significantly. In addition to GRID-Nairobi and GRID-Geneva, the new GRID-Bangkok facility firmly established itself within the Asian Institute of Technology. In August, the first self-financed GRID node in a developed country was opened by the Norwegian Prime Minister. GRID-Arendal will provide the GRID system with data from the Nordic and polar regions, with special technical and environmental assessment support.

26. Dialogues with the International Biosphere-Geosphere Programme have led to better definition of the global datasets necessary for scientific studies of global change. During 1989, GRID's global and regional data holdings rose to nearly 100 datasets, representing a volume of information of the order of four gigabytes, equivalent to some one billion words. A specific project was initiated to develop a global landcover dataset, using landcover classifications which are detectable from space and verifiable on the ground. It is anticipated that during the next biennium, GRID will take a lead role in providing a data management service for the International Biosphere-Geosphere Programme. In this context, the development of a methodology for monitoring forest cover (see para. 9) is providing one of the most important pieces in the global landcover mosaic, namely, global forest distribution.

27. A concrete example of provision of GIS support to agencies is the use of the GRID-Nairobi laboratory by the International Laboratory for Research on Animal Diseases (ILRAD) to model the areas in Africa at risk from a tick-borne disease, east coast fever, which kills more than a half-a-million cattle each year. There is broader discussion with ILRAD, WHO and others over the application of GIS technology to problems of human vector-borne diseases, particularly as these are affected by the environmental consequences of climate change. As a spin-off of the project on vector-borne diseases, GRID analysts have developed a technique using GIS to improve climatic data from synoptic weather stations. GRID is now working with the climate modelling contact laboratories of GEMS/Atmosphere to improve the datasets being used in modelling global and regional climate change.

28. GRID is providing technical support to developing countries in the form of training, datasets, analyst time and IBM-donated micro-computer systems, for example, within the context of the AMCEN African Monitoring Network. By the end of 1989, some 40 experts from 30 developing countries had been

trained in GRID technology. The largely Swiss-sponsored training is being decentralized, and the first training course in Nairobi has resulted in small teams using GRID-compatible systems being in place and operational in relevant ministries or departments in Ghana, Lesotho and Uganda.

### World Conservation Monitoring Centre

29. With the active participation of its three partners, IUCN, WWF and UNEP, the World Conservation Monitoring Centre has agreed on a two-year programme for the improved collection and analysis of data on the status and distribution of threatened plant and animal species, on habitats where conservation is a matter of concern, national parks and protected areas, and the trade in endangered species. This programme emphasizes the need to develop an international network of data sources and users to expand the gathering and dissemination of data, and the need to introduce new computer and database management systems, as recommended by a UNEP-GRID expert group.

30. The main highlights of the year were the co-publication, with UNEP, of the large-scale, three-volume Coral Reefs of the World; the introduction of GIS to facilitate the transfer of digitized data to UNEP-GRID; the use of this GIS to map the distribution of tropical forests overlaid by protected areas throughout South-east Asia; the data support provided to international conventions including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the International Tropical Timber Organization, the Bern Convention on the Conservation of European Wildlife and Natural Habitats, the Ramsar Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, the Convention for the Protection of the World Cultural and Natural Heritage, and to Unesco's Man and the Biosphere programme; and the analysis made of the proposed amendments to the appendix listing of CITES that was presented to the secretariat of the Convention for distribution at the Conference of the Parties.

### Harmonization

31. The GEMS programme, together with the various co-operating agencies and bodies, has always given careful attention to quality control of the data obtained. Within the global scope of GEMS activities and the broadening of the range of subjects covered, the increased need for comparability and compatibility of data has become apparent. At the same time, international

concern for data harmonization within the UN system has been growing. Several international meetings on the issue prepared the ground for Governing Council decision 15/38: "Harmonization of Environmental Measurements" (HEM). With financial support from the Federal Republic of Germany, the GEMS/HEM office in Munich was established in August 1989, housed within the Gesellschaft für Strahlenforschung in Munich.

32. Although a 1987 expert meeting recommended that the harmonization activities start first in the area of water resources and quality, it is clear that GEMS/HEM will very quickly have to address the whole panoply of environmental data. Moreover, there is clearly wide scope for a framework, and three areas of harmonization are currently under consideration: sectoral, taxonomic and data. Sectorial harmonization refers to problems of bringing together information generated from scientific investigations in different sectors to bear on one problem or on problems in one place; taxonomic harmonization refers to problems of matching different classification systems to provide a coherent spatial assessment or consistent temporal assessments; and data harmonization refers to problems of consistency and the comparability of measurement systems, data management systems and data formats.

#### The Environmental Data Report

33. During 1989, the Monitoring and Assessment Research Centre (MARC) compiled and produced the second edition of the Environmental Data Report. Compilation of the data was undertaken with the co-operation of the World Resources Institute (WRI) and the United Kingdom Department of the Environment. MARC also contributed to the WRI report World Resources 1990-1991.

34. During the compilation of the Environmental Data Report, more data were added to the interactive computer database which is being established at MARC. This database enables environment-related data to be made readily available for rapid responses to environmental issues. MARC undertook the final editing and production of the full assessment of the GEMS/WATER programme entitled Global Fresh Water Quality: A First Assessment, which was published in December 1989. Together with WHO, MARC also took part in reviewing and redesigning all the GEMS health-related monitoring programmes: air quality, fresh water quality, food contamination and the Human Exposure Assessment Locations (HEALs).

35. In December 1989, the third in a series of workshops for developing countries was run by MARC and the Federal University of Bahia in Salvador, Brazil. The subject was biomonitoring and low-cost techniques. Reports and handbooks on biomonitoring and low-cost techniques were prepared for the workshop, which was attended by 50 delegates from many research institutes and universities throughout Brazil.

#### Climate-related Monitoring

##### WMO/UNEP Background Air Pollution Monitoring Network (BAPMoN)

36. BAPMoN operations continued along the same lines as previously, with the regular publication of data and the holding of a training course in Budapest for observers at BAPMoN stations. In view of the slow expansion of the Network in Africa, Asia and South America, WMO and UNEP initiated in 1988 a thorough review of the objectives and operations of BAPMoN.

37. Four expert consultations were held (in Geneva, Melbourne, Boulder and Moscow) to solicit views from the scientific community and data users on how the network is perceived and on actions required to improve its relevance and performance. Subsequently, at the sixteenth meeting of the Executive Council of WMO, both WMO and UNEP endorsed the concept of revised and strengthened research, monitoring and assessment activity. The aim of this is to provide a better understanding of the relationship between changing atmospheric composition and changes in global and regional climate; the impact of changes in climate and other aspects of the Earth system on the chemical composition of the atmosphere; the long-range atmospheric transport and deposition of potentially harmful substances; and the natural cycling of chemical elements in the global atmosphere/ocean/biosphere system, and anthropogenic impacts thereon.

38. UNEP continued to provide support in global climate systems monitoring and analysing anomalous weather situations. The objective of the Climate System Monitoring (CSM) project is to improve understanding of the behaviour of the world's climate system, in particular its variability due to both natural and man-made causes. Monitoring of the system to detect signs of a global warming due to increasing greenhouse gases in the atmosphere is of special significance. A Climate System Monitoring monthly bulletin containing temperature and

precipitation statistics and anomalies by region is being distributed to 14,000 users, including government and scientific institutions, to provide continuous information on the state of the world's climate system and guide national and international decision makers in their planning of economic and environmental activities. A CSM Biennial Review 1987 - 1988, in which significant anomalies and teleconnections are discussed, as well as their causes, has been prepared and will be published in early 1990.

#### World Glacier Monitoring

39. The first inventory of the world's glaciers and icecaps was recently published under the title World Glacier Inventory Status 1988. The inventory shows the location and present situation of over 750 glaciers in 21 countries and has been carried out since 1976 as a co-operative activity among UNEP, Unesco, the International Commission on Snow and Ice (ICSI) and the Swiss Federal Institute of Technology. The monitoring of the world's glaciers continues under the auspices of the World Glacier Monitoring Service, operated at the Swiss Federal Institute of Technology in Zurich and supported by UNEP, Unesco and ICSI. This service will collect data on the actual situation of glaciers around the world and, in particular, will concentrate on studies of the annual behaviour and mass balance of a selection of reference glaciers in various glaciated regions of the globe. A first Glacier Mass Balance Bulletin is expected to be published in 1990.

#### Atmosphere (Budget subline 112)

##### Protection of the Ozone Layer

40. Although the principal activities of UNEP related to the ozone layer fall under the Environmental Law and Institutions Unit and concern the implementation of the Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol on Substances that Deplete the Ozone Layer, GEMS/Atmosphere continues to support the programme in several ways.

41. Following the establishment of four panels to review the scientific, environmental, technical and economic information required for the Parties to the Montreal Protocol to undertake a review of the control measures, GEMS has assisted in the preparation of the reports on scientific and environmental effects. The scientific review was led by the United States and

involved the participation of 136 scientists from 25 countries. The report concentrated on four major findings since the adoption of the Montreal Protocol in September 1987:

(a) The weight of the evidence strongly indicates that man-made chemicals containing halogens (CFCs, Halons) are primarily responsible for the springtime loss of Antarctic ozone;

(b) The same potentially ozone-destroying processes responsible for the Antarctic ozone hole have been identified in the Arctic stratosphere and, although no measurable ozone loss has occurred comparable to that measured over the Southern polar region, the possibility of future significant ozone destruction, depending on future increases in the atmospheric concentrations of chlorine and bromine and on the particular meteorology of each Arctic winter, cannot be ruled out;

(c) There was a downward trend in ozone concentrations in the Northern Hemisphere of 3 to 5 per cent from 1969 to 1988, which cannot be attributed to natural processes; and

(d) There is continuing uncertainty about the predictive capability of current models particularly with regard to future ozone changes at high latitudes.

42. These scientific findings have implications for the Parties to the Montreal Protocol in the decision on amending the present control measures for ozone depleting substances. Even with full global compliance with current regulatory measures, by 2050 the atmospheric concentration of chlorine will have tripled from its current level of less than 3ppbv, and even with present concentrations the Antarctic hole occurs each spring. Chlorine concentrations will not fall below present levels unless currently controlled CFCs are completely phased out. Other man-made substances, particularly carbon tetrachloride and methyl chloroform, must also be controlled and potential substitutes containing chlorine such as the partially-halogenated chlorofluorocabons (HCFCs), need to be carefully examined for their environmental acceptability, including their potential for destroying the ozone layer and their likely contribution to greenhouse warming, before they can be accepted as safe alternatives for phased-out substances.

43. The implications that increasing levels of atmospheric chlorine and bromine hold for total global ozone are not known

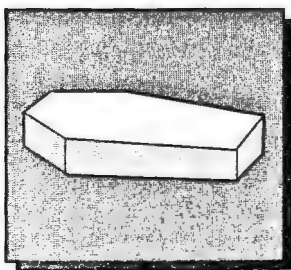
with any certainty and future global ozone layer depletion could well be greater than originally predicted. The Environmental Effects Panel, led jointly by the Federal Republic of Germany and the Netherlands and involving 48 scientists from 17 countries, has confirmed the risks posed by ozone layer depletion (see figure 2). Ultraviolet-B radiation can cause the suppression of the body's immune system, which might cause an increase in the occurrence or severity of infectious diseases. A 1 per cent loss of total column ozone might increase cataract incidence by 0.6 per cent and could also result in a 3 per cent rise in non-melanoma skin cancers, already the most prevalent of all cancers. Increased ultraviolet radiation related to ozone loss will affect the quality and quantity of terrestrial plants, with a severe impact on people living in areas where food shortages already occur. Other adverse effects would occur in aquatic ecosystems, affect air quality and possibly shorten the life of some plastics used in construction.

Figure 2

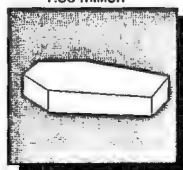
**Implementation of the Montreal Protocol is estimated to cut skin cancer deaths due to ozone depletion among people born before 2075 from 2 million to 140,000; skin cancer cases from 98 million to 8 million; and cataracts from 43 million to 5 million.**

### SKIN CANCER DEATHS

EXPECTED CASES WITHOUT  
OZONE DEPLETION 3 million



ADDITIONAL CASES  
WITHOUT CONTROLS  
1.86 million

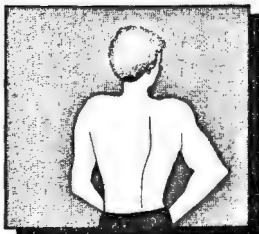


ADDITIONAL CASES  
WITH 50% PROTOCOL  
0.14 million



### SKIN CANCER CASES

EXPECTED CASES WITHOUT  
OZONE DEPLETION 165 million



ADDITIONAL CASES  
WITHOUT CONTROLS  
90 million



ADDITIONAL CASES  
WITH 50% PROTOCOL  
8 million



### CATARACTS

EXPECTED CASES WITHOUT  
OZONE DEPLETION 426 million



ADDITIONAL CASES  
WITHOUT CONTROLS  
38 million



ADDITIONAL CASES  
WITH 50% PROTOCOL  
5 million



44. The reviews of current and projected technology and of the economic consequences of our actions suggest that there are no obstacles that cannot be surmounted and no expenses that cannot be met in discontinuing the use of CFCs and Halons by the year 2000 or soon after, in line with the Helsinki Declaration agreed by more than 80 countries in April 1989.

45. An important international meeting, the "Saving the Ozone Layer Conference", convened in London by the United Kingdom with the support of UNEP in March 1989, underscored the importance of protecting the ozone shield. There was a consensus among the more than 600 representatives of 120 countries attending the conference that all countries should aim at ending the production and consumption of CFCs by the end of the century.

#### Greenhouse gases and global climate change

46. The Intergovernmental Panel on Climate Change (IPCC) established by UNEP and WMO as the international response to the threat of greenhouse gas warming (1988 Annual Report, chap. III, para. 37), has continued to be the major forum for examining the issue of climate change. Its work is conducted in three main working groups: the Group on the Scientific Aspects of Climate Change (chaired by the United Kingdom); the Group on the Environmental and Socio-economic Impacts resulting from Climate Change (chaired by the USSR); and a Response Strategies Working Group (chaired by the United States).

47. The first session of the Group on the Scientific Aspects of Climate Change was held at Nuneham Park in the United Kingdom from 24 to 26 January 1989. Attended by 50 scientists representing 15 countries and five international organizations, including UNEP, the session examined and agreed on the terms of reference of the Group, decided on the various sections to constitute its report and identified lead authors for and contributors to the various sections. The thrust of activities of the Group during the year was the organization of workshops, prominent among which was the one held in Amherst in the United States in May 1989. This workshop expanded the number of sections of the Group's report from nine to eleven, thus facilitating consideration of a number of topics not previously considered by the first session of the Group.

48. The Group on the Environmental and Socio-economic Impacts resulting from Climate Change held two sessions during the year

under review. The first session, held in Moscow from 2-3 February 1989, attracted over 60 scientists representing 16 countries and seven international organizations. The session agreed on five topics that would form the principal focus of its work, and established five corresponding sub-groups and a steering committee to co-ordinate their work and to facilitate liaison with the other IPCC working groups. During its meeting in Moscow in May 1989, the steering committee revised the number of topics that form the focus of its work to seven, adding two further areas, namely climate change and the cryosphere, including the problems of permafrost and prediction of future climates, and recommendations on the application of analogue methods. The second session of the Group, which was held in Geneva from 31 October to 1 November 1989 and attended by 100 participants representing 32 countries and 15 international organizations, including UNEP, reviewed the progress made by the different sub-groups in compiling their reports.

49. The Response Strategies Working Group held its first session in Washington D.C. from 30 January - 1 February 1989 and was attended by 120 scientists from 32 countries and 10 international organizations. There were 60 observers. The Group established four sub-groups: energy and industry; agriculture and forestry; coastal zone management; and resource use and management. In addition, the Response Strategies Working Group established a steering committee to facilitate co-ordination of the Group's activities. At the session five areas were identified which are to form the basis of a multidisciplinary approach to the implementation of strategies in response to climate change, namely: legal and institutional measures; technology transfer and development; financial measures; public education and information; and economic and market measures. All these constituted the agenda for the second session of the Response Strategies Working Group, which was held in Geneva from 2 to 6 October 1989. The session was attended by 163 delegates representing 43 Governments and by 25 observers from international organizations.

50. The IPCC Bureau, meeting early in the year (from 6 to 7 February 1989), reviewed the work plans and proposed the structure of these three Working Groups. The IPCC Bureau further made recommendations as to the overall structure of the IPCC first assessment report, and endorsed the budget of the IPCC Secretariat. Noting the low level of participation of developing countries in the activities of the IPCC, the Bureau

established an ad hoc group, chaired by Saudi Arabia and consisting of Brazil, Senegal and Zimbabwe, to examine the issue and to report to the IPCC Bureau at its second plenary session.

51. The second plenary session of the IPCC Bureau was held in Nairobi from 28-30 June 1989 and attended by 160 delegates representing 44 countries and 21 international organizations. At the session the IPCC examined and endorsed progress reports by the chairpersons of the working groups and by the ad hoc group on developing countries' participation that had been established earlier by the Bureau. At the session a 10-member Special Committee on Problems Related to Developing Countries was established, chaired by France, with the membership of Algeria, Brazil, India, Indonesia, Japan, Kenya, Norway, USA and USSR. Furthermore, in order to reflect more fully the intergovernmental character of the IPCC, the concept of core membership of the Working Groups, which had been established at its first session, was abolished. In endorsing the report of the steering committee of the Response Strategies Working Group, the IPCC also agreed to establish the elements for a future convention on climate change and decided that the first assessment report of the work of IPCC form the starting point for the negotiations on a framework convention on climate change.

#### World Climate Impact Studies Programme (WCIP)

52. For the past years, UNEP has engaged in several projects for climate impact assessment. While the phenomena resulting from the impact of climate variability and change are now better understood, there is an urgent need to make available to Governments information on climate change that is relevant to policy formulation for sound socio-economic developments. An International Networkshop on Climate-related Impacts, sponsored by UNEP and the National Center for Atmospheric Research (NCAR) was held in Boulder, Colorado, in March 1989 to assess the value of and the constraints on establishing national climate programmes and linking together such programmes within an international framework. The networkshop concluded that there was a need to establish national climate-related impact networks and to develop an international network devoted to climate-related impact assessment. The networkshop further recommended that WCIP could serve as the focal point of this network, one important activity of which should be to publish and disseminate an international newsletter. A follow-up

international networkshop is to be convened in 1991, under the auspices of UNEP and WMO, to review progress in the development and operation of national and international climate-related impact networks and national climate programmes.

53. The AMCEN Climatology Network envisaged in the Cairo Programme of Action, which is the outcome of the first African Ministerial Conference on the Environment (AMCEN), covers aspects of climatological research, applications and data. The first meeting of the Regional Co-ordination Unit (RCU) of the AMCEN Climatology Network, held in Bujumbura, Burundi, in January 1989, made concrete recommendations for action, including organizational and operational arrangements.

54. As the proposed actions for the AMCEN Climatology Network are compatible with those suggested with regard to the establishment of the African Centre of Meteorological Applications for Development (ACMAD), it is expected that the Regional Network will be amalgamated with ACMAD once the latter becomes operational. UNEP is exploring the feasibility of establishing national climate programmes in African countries. As such national programmes develop, they will be incorporated into a regional network serving AMCEN, and UNEP will co-ordinate the international network designed to facilitate interaction among all such national and regional climate impact networks.

55. There was continued activity to encourage the application of climate impact assessment to sensitive socio-economic sectors. A World Conference on Preparing for Climate Change was convened by the Climate Institute in Cairo in December 1989, with the support of UNEP and the Government of Egypt. The proceedings of the conference are to be published in 1990.

#### INFORMATION EXCHANGE (Budget line 12)

International Register of Potentially Toxic Chemicals (IRPTC)  
(Budget subline 121)

56. In the course of the past five decades, chemicals, in particular organic compounds, have been synthesized, manufactured and used in increasing numbers and quantities by a steadily growing number of industries, both in developed and developing countries. Chemical products have greatly contributed to improving health, agricultural production, shelter and clothing, thereby considerably raising the general

quality of life for millions of people around the world. However, the continued expansion in the production and use of chemicals has inevitably led to increased risks to the health of workers, the general population and the environment. While countries initially dealt with few specific chemicals that were known to have created problems because of their wide distribution, their persistency in the environment and their well-documented risks to health, have led more and more industrialized countries to develop policies for the routine testing of new chemicals before marketing and use.

57. Chemicals already on the market, some of them for a long time, have also come under close scrutiny, mainly because, not infrequently, little is known about their dangers to health and the environment, although they are being used for a number of processes, sometimes in enormous quantities. Countries have realized that potentially differing national policies for chemical control might lead to large-scale duplication of work related to the generation of data and the assessment of the hazards of chemicals and might possibly lead to distortion in international trade. Further, it became quite obvious that the task of full-scale assessment of the hazards of all chemicals in common use exceeded the capabilities of any one country, and that strengthened international co-operation and an exchange of information and experience were urgently needed. There is now broad agreement that countries should co-operate and facilitate the exchange of scientific, technical, economic and legal information on the management of chemicals, in order to protect human health and the environment, as well as to provide technical advice and assistance upon request, taking into account the special problems and needs of developing countries.

58. In its decision 15/28, adopted by the Governing Council at its fifteenth session, it reconfirmed the essential role of IRPTC in co-ordinating the world-wide exchange of information and data on the production, distribution, release and disposal of chemicals, and in supporting developing countries in establishing national registers of potentially toxic chemicals. Therefore, during 1989 IRPTC continued to further strengthen and expand its activities in this field, in close co-operation with its network of national correspondents and through active participation in the work of other international and national organizations and programmes.

59. One country appointed a second national correspondent to IRPTC in 1989. The number now stands at 119 national correspondents from 111 countries with the following distribution:

| Region                             | Number of<br>Countries | Number of national<br>correspondents |
|------------------------------------|------------------------|--------------------------------------|
| Africa                             | 27                     | 30                                   |
| Asia and the Pacific               | 23                     | 24                                   |
| Europe and North America           | 29                     | 31                                   |
| Latin America and the<br>Caribbean | 22                     | 23                                   |
| West Asia                          | <u>10</u>              | <u>11</u>                            |
| Total                              | 111                    | 119                                  |

60. IRPTC's computerized central files continued to be updated and expanded to cover a larger number of chemicals. At present, fairly complete data profiles exist for over 600 chemicals of international concern. Priorities for further development are being based on the needs identified in the implementation of the amended London Guidelines for the Exchange of Information on Chemicals in International Trade. The work carried out by IRPTC and its contributing network partners in 1989 focused on the collection of data on chemicals and their toxicity to mammals and aquatic organisms, as well as on legal information. Furthermore, it was decided to fully update and expand the waste management file. During 1989, the task of incorporating all the evaluations of more than 600 chemicals carried out by the International Agency for Research on Cancer (IARC) was completed, and efforts were initiated to incorporate, on a systematic basis, the relevant health and environmental risk appraisals for chemicals evaluated by the International Programme on Chemical Safety (IPCS).

61. There were significant initiatives in 1989 with respect to the computer management of the IRPTC data, and to the enhancement of global access. Following an analysis of the database design and the methods for data collection and dissemination, a number of refinements were identified including the need to convert the data for operation on a personal computer. At the end of 1989, an expert consultation was hosted by the United States Environmental Protection Agency, at which a number of recommendations were made for IRPTC with respect to structural changes to the IRPTC files, the selection of computer software and data exchange technology. Studies were also undertaken on IRPTC's behalf by network partners from Canada and Poland to test the suitability of various personal computer-based software in preparation for this consultation. As part of this effort, tape copies of the entire IRPTC database in mainframe format were also provided to Brazil and the United States.

62. The Canadian National Correspondent continued to provide on-line computer access to IRPTC data for users in Canada and elsewhere; there are now in excess of 300 registered users in Canada. The Canadian network partner also completed a marketing analysis of the database which has led to refinements in the promotion of the database and the options for accessing the partner's minicomputer. Data transfer of the entire database to Canada was systematized and was carried out every six months. Additional copies of the updated information in the Canadian format were distributed to network partners in China, Peru and Thailand. The IRPTC Legal File, containing entries for more than 8,300 chemicals, was again transferred to the Commission of the European Communities under an agreement relating to the development of co-operation and exchange of information on environmental chemicals. As a result, this data continued to be accessible on-line and worldwide through the Environmental Chemicals Data and Information Network (ECDIN). A prototype computerized data entry module was developed by Canada for the Legal File to encourage countries to contribute their national legal data in an efficient manner.

63. Co-operation continued with network partners from Canada, the Federal Republic of Germany, Japan, and the Netherlands in the exchange and management of toxicity, legal and other data on specific priority chemicals. The aquatic toxicity file was exchanged with the Federal Republic of Germany and was incorporated into the country's information system, INFUCHS. New opportunities were also identified for co-operation in

these same areas with Brazil, China, Poland, USA and USSR, and with organizations such as OECD, and this led to specific plans for collaboration.

64. 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. The joint USSR-UNEP/IRPTC activity also included the preparation of an International Survey on the Use of Classification Systems for Chemicals based on Their Toxicity and Hazards. The survey, discussed at a workshop in Leningrad in early 1988, was finalized in 1989 and presented several times during the year at international meetings related to the development of a harmonized international classification system for chemicals.

65. Following previous efforts to bring to fruition IRPTC's concept of an international exchange network with developing countries, in 1989 IRPTC, with support from the Government of the Netherlands, initiated an expanded three-year effort to establish national registers of potentially toxic chemicals (NRPTCs). Publication of a newsletter, the preparation of guidelines, staff visits, and the development of promotional materials were among more than 20 activities identified as part of this phase of work.

66. IRPTC's Query-Response Service continued to receive queries on chemicals from national authorities, academia, industry, NGO's and interested individuals. Many queries are complex: from 421 queries received up to 30 November 1989, 1,759 specific questions had to be answered. The number of chemicals involved in each query has significantly increased during the past two years. Of the queries received in 1989, 50 per cent came from developing countries (see table below). Approximately 13 per cent related to uniquely regulatory measures and national and international recommendations. IRPTC continued to answer queries which had been received by the International Programme on Chemical Safety (IPCS) and INFOTERRA, for which the Register functions as a Special Sectoral Source, as well as those received through the OECD Switchboard procedure.

| Year | Total Queries | Agrochemicals<br>(per cent) | Legal Matters<br>(per cent) |
|------|---------------|-----------------------------|-----------------------------|
| 1982 | 104           | 45                          | 26                          |
| 1983 | 197           | 38                          | 30                          |
| 1984 | 200           | 50                          | 35                          |
| 1985 | 335           | 44                          | 27                          |
| 1986 | 292           | 48                          | 28                          |
| 1987 | 312           | 41                          | 25                          |
| 1988 | 350           | 35                          | 17                          |
| 1989 | 421           | 30                          | 13                          |

67. In several cases, IRPTC called upon its national correspondents and other network partners, including specialized institutions, individual experts and chemical companies, to answer queries in part or in full. The latter half of 1989 saw the entry into service of a personal computer database to register and keep a record of the incoming requests for assistance received by IRPTC on a daily basis.

68. In response to Governing Council decision 14/27, which deals, inter alia, with the exchange of information on chemicals in international trade, throughout 1989 IRPTC continued to execute its responsibilities as stipulated in the London Guidelines. It maintained and regularly distributed a register of Designated National Authorities located in 75 countries. It processed and disseminated Notifications of Control Action to ban or severely restrict chemicals, and it maintained regular contacts with national authorities and international organizations in connection with the implementation of the London Guidelines. Notifications of Control Action for banned or severely restricted chemicals have been annually transferred to the United Nations Secretariat for inclusion in the Consolidated List of Products whose Consumption and/or Sale have been Banned, Withdrawn, Severely Restricted or not Approved by Governments.

69. In 1989 the Governing Council in its decision 15/30 endorsed the incorporation of the principle of prior informed consent (PIC) into the London Guidelines. The PIC procedure is a means of formally obtaining and disseminating the decisions of importing countries as to whether they wish to receive future shipments of chemicals that have been banned or severely restricted. Consequently, work was initiated in 1989 to implement the amended London Guidelines and to apply the prior informed consent procedure. Activities will include the selection of chemicals to come under the procedure, the preparation of decision guidance documents, the further development of the network of Designated National Authorities, the establishment of a procedure for disseminating Notifications of Control Action and communicating the decisions of importing countries and the establishment of a special database. IRPTC also started to analyse the problems and needs of countries, in particular the developing countries, in implementing the amended London Guidelines and began to develop recommendations on practices and procedures, including a package programme, to make the Guidelines effective (see para. 291).

70. Through IRPTC, UNEP has established a close working relationship with FAO under a joint programme for the implementation of the prior informed consent procedure. As a result of a parallel development, which led to the FAO Conference resolution to incorporate the principle of prior informed consent into the International Code of Conduct for the Distribution and Use of Pesticides, FAO shares the responsibility for the operation of the procedure.

71. IRPTC continued to monitor research and technical and legislative developments related to the List of Selected Environmentally Harmful Chemical Substances, Processes and Phenomena of Global Significance, as required by the Governing Council under its decisions 14/32 and 15/29. During the second half of 1989, the process of reviewing the list was initiated and will result in a fully updated report, for submission to the Governing Council in 1991.

72. IRPTC played an important role in UNEP's preparation of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. IRPTC will co-operate closely with the interim Secretariat of the Convention and with UNEP's Industry and Environment Office, in particular, in developing guidelines and procedures for implementing the

technical provisions of the Convention, and will continue to provide information on and assistance in the environmentally sound management of hazardous wastes.

73. In 1989 IRPTC continued to participate actively in the work of IPCS through the collection, selection and validation of data on chemicals for inclusion in IPCS documents. IRPTC staff also took part in several task group meetings to assess the risks that chemicals pose to health and the environment. IRPTC also continued work with IPCS to collect national chemical reviews as part of the joint project on the Registry of Chemicals Currently being Tested for Toxic Effects (CCTTE). New information was collected from national contact points and was incorporated into the latest edition of this report. The IRPTC library became the international repository for critical reviews on chemicals and enhanced its bibliographic data management by converting operations to a personal computer.

74. During 1989, IRPTC continued its activity of 1988 to further strengthen co-operation with other international organizations such as the European Economic Community (EEC) and OECD. A joint study was completed on the identification and description of substances to which workers are exposed at the workplace and which are easily absorbed through the skin. The results were presented to a group of experts and are now being published by EEC. Concerning OECD, IRPTC continued to participate as a partner in the OECD complementary information exchange procedure on chemicals. IRPTC also became closely associated with OECD activities on high production-volume chemicals, chemical accidents and flame retardant chemicals.

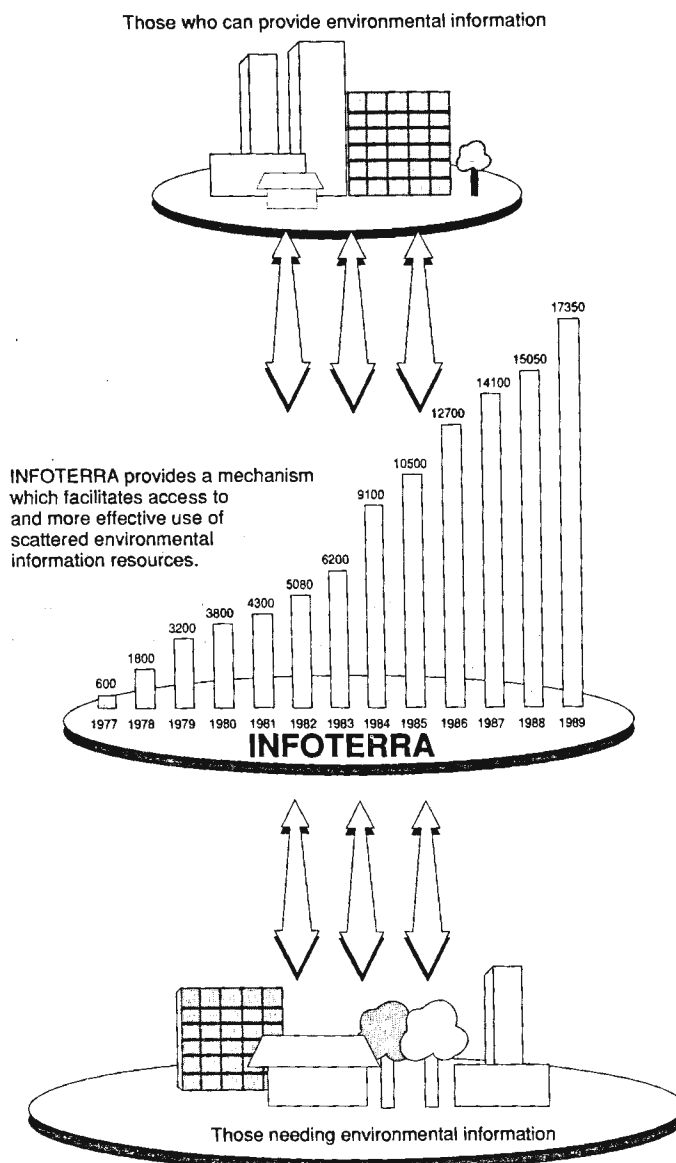
75. Contacts with CMEA were also further developed during 1989. An agreement on co-operation in the field of chemical safety between the CMEA Secretariat, IPCS and IRPTC was signed in Moscow in September 1989. In this context IRPTC has provided assistance in regional activities for the exchange of information on chemicals and has maintained regular contacts with its national correspondents in the region. An expert consultation on a regional information exchange network on chemicals organized in Moscow in October 1988 resulted in the initiation of a feasibility study for the above network. The study will be discussed at a workshop to be convened in Moscow in March 1990. IRPTC collaborated closely with the International Centre for Scientific and Technical Information (ICSTI), Moscow, which is a regional centre, in developing

programmes to adapt the IRPTC database to computer facilities available in the region and in developing options for a network structure.

76. In 1989, in co-operation with the Government of the USSR, IPCS and CMEA, IRPTC organized a training meeting for participants who were mainly from developing countries. The meeting concentrated on problems of preventive toxicology of industrial and household chemicals, control of chemical hazards, including international recommendations and national legislation on chemicals. IRPTC also supported an IPCS training course on health aspects of pesticide use, held in the USSR in 1989 for participants from developing countries.

#### INFOTERRA (Budget subline 122)

77. In response to the need, especially in developing countries, for a mechanism to facilitate access to, and more effective use of, scattered environmental information sources, UNEP has developed and is operating INFOTERRA - the International Environmental Information System - designed to link those needing environmental information with those who can provide it. During 1989, over 16,000 inquiries from some 95 countries were received by INFOTERRA. Most of the inquirers (86 per cent, based on the ongoing INFOTERRA user satisfaction survey) rated the services provided as excellent or very good. Slightly over half of all queries received and processed were from developing countries. During the year, INFOTERRA put greater emphasis on the provision of substantive information and on the quality of the information (see Figure 3).

**Figure 3****Number of queries processed by INFOTERRA network  
1977 to 1989**

78. The INFOTERRA network operates on the basis of National Focal Points (NFPs), Regional Services Centres and Special Sectoral Sources. The INFOTERRA network continued to grow in 1989. With Iceland, the Islamic Republic of Iran and Mozambique joining the network, the number of INFOTERRA NFPs stands at 137, covering more than 99 per cent of the world's population. The designation of the Venezuela NFP as the Regional Service Centre for the Caribbean countries increased the number of such centres to nine. A number of leading institutions have provided services as INFOTERRA Special Sectoral Sources, bringing the total to 28.

79. As part of the effort to consolidate the network and to elevate the INFOTERRA services to a new height, the World Conference on Environmental Information Exchange in the 1990s was held (INFOTERRA 3, from 13 to 18 March 1989 in Moscow), with the participation of 102 countries and United Nations agencies and organizations. The Conference took stock of INFOTERRA achievements and examined major aspects of INFOTERRA activities. The adopted set of 32 recommendations constituted a strategy for the further development of INFOTERRA, a strategy that was endorsed by the Governing Council at its 15th session in its decision 15/40.

80. As a first step in implementing the recommendations of INFOTERRA 3 a Task Force for the INFOTERRA Thesaurus was established, which completed the revision of the INFOTERRA Thesaurus for Environmental Terms, with emphasis on refining the terms used within the UNEP areas of concentration. In further implementing the recommendations of INFOTERRA 3, in 1989 there were efforts to establish an INFOTERRA "companionship" between INFOTERRA partner countries, with the aim of associating NFPs from developing countries that are in need of assistance (in terms of personnel, as well as equipment and technology) with NFPs from developed countries that are able and willing to provide such assistance. The ultimate target is to obtain a more effective INFOTERRA global network by strengthening the information infrastructure in the less developed partner countries.

81. The second volume in the INFOTERRA Exchange of Environmental Experiences series - Drylands, Wetlands, Croplands: Turning Liabilities into Assets - was published in 1989 in English. A survey indicated that the majority of readers considered the publication very useful. The fifth volumes of the INFOTERRA International Directory and of The Index were also published during 1989.

82. Technical assistance to NFPs in developing countries remains a priority area. A training seminar for newly designated NFP staff was held in Nairobi from 3 to 7 July 1989. The INFOTERRA database on micro CDS/ISIS was supplied to 52 NFPs as well as to six international agencies. INFOTERRA staff visited a number of NFPs and provided assistance, and INFOTERRA national seminars were held in seven countries.

83. As in the past, the major problem encountered during 1989 involved the financial difficulties experienced by a number of developing countries in maintaining the operation of their NFPs. Nevertheless, through co-operation and the sharing of information, the INFOTERRA network maintained its momentum and succeeded in responding to the growing world demand for accurate and up-to-date information on environmental matters.

State of the Environment (Budget subline 123)

84. In keeping with Governing Council decision 14/9 B, paragraph 7, in which the Council decided that the 1989 state-of-the-environment report should be an update of the 1987 report on the state of the world environment, but with more in-depth treatment of specific subjects and/or geographical areas, the report entitled "1989 The State of the World Environment" was submitted to the Council at its fifteenth session as document UNEP/GC.15/7/Add.2. Additionally, in accordance with Governing Council decisions SS.I/2 and 15/13, in 1989 most of the background work and research were undertaken jointly with UNICEF for the 1990 state-of-the-environment report "Children and the Environment". The report will be submitted to the Council at its sixteenth session.

85. Further, in compliance with Governing Council decision 15/13, during 1989 preliminary work was undertaken for the preparation of a brief analytical report on changes in the state of the world environment since 1972, for presentation to the United Nations conference on environment and development, planned for 1992. During the year preliminary work started for the preparation of a comprehensive report of the state of the environment, covering the decade leading up to the Council's session in 1993.

## Library and Documentation Centre

86. In 1989, as in the past, the Library continued to collect and make available environmental, scientific and social information from books, periodicals, technical reports and United Nations documents. During the year under review, the Library recorded 19,151 user visits. Of this total, 8,647 user visits were made by UNEP staff, 3,264 by UNCHS staff, 760 by staff from other United Nations organizations and 6,480 by users from outside the United Nations (permanent missions, embassies, international institutes, consulting companies, university faculty members and students as well as secondary school staff and students).

87. In public services, the Library's reference/circulation staff handled 4,693 reference questions and 4,685 items were taken out on loan. The Library's Selective Dissemination of Information (SDI) programme was continued, with 1,040 periodical articles circulated to Programme staff members. The micro-computer that had formerly been used in technical services was moved to the Reference area and reference/circulation staff began to offer on-line search services with printouts of search results for the EPLIB/EPPER databases. The Library's micro-computer is now connected to the WANG VS (EDPU) and it is possible to search the UNBIS database in the United Nations, New York on-line each working day from 11.00 a.m. to 2.00 p.m.

88. In technical services, 1,180 items were catalogued and entered on the EPLIB database, bringing the total number of records on the database to 3,700. The items catalogued include: books ordered at the request of Programme staff, periodical articles, scientific and technical reports, UNEP project outputs and other selected United Nations documents. During 1989, the Library received a new micro-computer and all data was transferred to the new computer, 61 new periodical titles were added to the Library's periodical collection, bringing the total number of periodicals maintained by the Library to 1,141.

89. Co-operation between the UNEP and UNCHS (Habitat) Libraries continued as in the past. This informal co-operation began with the idea of better utilizing financial resources and reducing duplication, but has grown to be an active co-ordination of acquisition, cataloguing and reference services as well as the development of compatible databases. During 1989, a visit was made to the UNEP/Industry and

Environment Office (IEO) library in Paris and this has resulted in a better knowledge of the IEO information resources and more frequent exchanges of information. Assistance was provided to OCA/PAC's Co-ordinating Unit for the Mediterranean Action Plan, Athens in the development of a standardized database design for bibliographic information, which will be used for the compilation of a comprehensive bibliography on the Adriatic Sea. In Nairobi, the Library remained an active member of the Nairobi Information Group (information personnel and librarians from UNEP, UNCHS, UNICEF, the International Laboratory for Research on Animal Diseases (ILRAD), the International Centre of Insect Physiology and Ecology (ICIPE), the International Council for Research in Agroforestry (ICRAF), the United States Agency for International Development (USAID), the International Development Research Centre (IDRC), the United States Library of Congress) which acts largely as a user group for the micro CDS/ISIS software.

## ENVIRONMENTAL MANAGEMENT

### OCEANS AND COASTAL AREAS (Budget line 21)

90. Through its Oceans and Coastal Areas Programme Activity Centre (OCA/PAC), UNEP has continued to build a balanced combination of global and regional activities designed to strengthen Governments' ability to understand marine and coastal problems and to manage them on scales that are appropriate to the size of the marine and coastal ecosystems.

#### Global marine environment

91. Concerning marine pollution, UNEP continued to exercise its co-ordinating and catalytic role within the United Nations system primarily through its support of the IMO/FAO/Unesco/WMO/WHO/IAEA/UN/UNEP joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP) which provides advice to the eight sponsoring bodies and oversees working groups preparing reports on critical problems in the marine environment. UNEP also convened an interagency meeting in September 1989 to allow the many co-operating organizations inside and outside the UN system to report on and co-ordinate their efforts to implement the oceans and coastal areas programme.

92. Throughout the biennium 1988-1989 work continued under the direction of GESAMP, on a major global review of the state of the marine environment. Based in part on 14 regional reports prepared with UNEP support during 1988, a GESAMP working group of the world's leading specialists analysed and prepared a summary of the health of the oceans. Their report, to be released in early 1990, should provide the basis for increased action by States and international organizations to respond to the increasing degradation of the coastal and marine environment.

93. In light of the growing concern about the possibilities of major climate change and sea-level rise as a result of the greenhouse effect, a significant effort was made, through a series of UNEP-sponsored regional task teams, to determine the potential effects of these changes on coastal and marine areas, with particular emphasis on vulnerable islands. In addition to six regional reviews prepared in 1988, numerous case studies were completed. Two new task teams were formed for Eastern and Western Africa, and the first regional intergovernmental meeting was held to present the results to government planners and policy makers. Of the nearly 100 experts participating in these task teams, over 60 came from developing countries, building a significant pool of new expertise in this important field. UNEP also supported the participation of some of these experts in the activities of the Intergovernmental Panel on Climate Change.

94. Planning continued for the development of a globally co-ordinated marine pollution monitoring system. Under the general supervision of OCA/PAC, work continued on the standard set of reference methods for marine pollution studies. These methods, prepared through the collaboration of several international agencies, are designed to ensure the high quality and intercomparability of data from all regions of the world. The use of these standard methods is required in all the regional seas programmes.

#### Regional seas programme

##### Mediterranean region

95. Under the Mediterranean Action Plan, the success of the many activities by States and regional centres in documenting the state of their shared sea, and the completion and publication in 1989 of the Blue Plan projecting the possible

futures for the region, motivated a major reorientation of activities towards more integrated projects and the application of solutions to the problems identified.

96. There was a progressive expansion of the Action Plan to cover coastal area problems and to develop co-operation in closely related subjects such as seismic risk reduction in coastal areas (with a new regional centre inaugurated in Italy in 1988) and protection of historic coastal sites. The programme was refocused on integrated coastal zone management to give greater prominence to the management of coastal areas and to integrate more closely the various components of the Action Plan. Pilot projects began in several countries. Global concerns over climate change and movement of toxic waste have received special attention.

97. The monitoring programme for marine pollution continued to grow in size and scope, forcing a rethink in the programme's monitoring strategies. The terms of reference of the Regional Oil Combating Centre in Malta were expanded to include dangerous substances other than oil and it was renamed the Regional Marine Pollution Emergency Response Centre. The priority actions programme continues its practical approach, based on case-studies and attention to national priorities. The Regional Centre for Specially Protected Areas in Tunisia produced guidelines for new protected areas and, based on these guidelines, lists of sites to be protected.

98. The sixth meeting of the contracting parties to the Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-based Sources and the Protocol concerning Mediterranean Specially Protected Areas in October 1989 approved a workplan and budget for the next biennium of \$11 million, the largest in the programme's history.

#### Kuwait Action Plan region

99. Within the framework of UNEP's support to the Regional Organization for the Protection of the Marine Environment (ROPME), UNEP assisted in the finalization of the plan of action for surveillance, ecological assessment and clearance of war-related pollution objects and wrecks in the ROPME sea area. In its decision 15/26 the Governing Council requested the Executive Director "to provide, in co-operation with the International Maritime Organization and within available resources, assistance to the Regional Organization for the

Protection of the Marine Environment in the implementation of the plan of action". In this context, UNEP is providing ROPME with: (a) information on the ecological and geomorphological characteristics of the area; (b) guidelines for assessing the environmental impact of the presence and clearance of wrecks and disposal of mines and ordnance; (c) maps showing the main ecological habitats, ecologically sensitive areas and fisheries grounds to be protected during clearing operations.

100. In coastal zone management, UNEP assisted ROPME in the formulation of a draft regional strategy for coastal zone management and development and actively participated in ROPME's expert meeting on that subject. In co-operation with the Intergovernmental Oceanographic Commission (IOC) and a group of scientists from the region, UNEP completed the regional report on the state of the marine environment in ROPME. In the field of training, UNEP continued to provide support to ROPME and its member States by inviting experts from the region to various training courses and workshops organized by UNEP in other regions. UNEP also continues to co-ordinate the assistance given by IAEA and other United Nations agencies to ROPME, particularly in intercalibration, data quality assurance, ecological assessment and environmental protection. A task team was established to examine the potential impact of expected climatic changes on the region covered by ROPME.

#### West and Central African region

101. In January 1989, the Executive Director convened in Dakar the sixth meeting of the Steering Committee and the second meeting of the Contracting Parties to the Abidjan Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region and its associated Protocol Concerning Co-operation in Combating Pollution in Case of Emergency. The Contracting Parties agreed on the medium term programme (until 1995) and approved the workplan and budget as proposed by the Executive Director.

102. The established network of 23 national institutions continued its activities relevant to the West and Central Africa Region (WACAF) project on marine pollution monitoring and research. A new phase of the project was developed and approved, focusing on pollutants and sites identified as requiring urgent attention, with a view to formulating concrete proposals for pollution control measures commensurate with the magnitude of the problems at these sites.

103. The report on the evaluation of the WACAF action plan, its development and achievements was published by OCA/PAC (Regional Seas Reports and Studies No. 101) in 1989. A regional report on the state of the marine environment in the West and Central Africa region was also prepared, in co-operation with FAO and IOC. A task team, established to assess the potential impact of the expected climate changes on the coastal and marine ecosystems as well as on socio-economic structures and activities in the West and Central African region, held its first meeting in Lagos from 7 to 9 June 1989, and its second meeting, jointly with the Eastern African task team, in Nairobi from 18 to 21 December 1989.

#### Wider Caribbean region

104. There was continued progress in consolidating the work of the UNEP Regional Co-ordinating Unit for the Wider Caribbean, in Jamaica. An additional State ratified the Cartagena 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, bringing the number of Parties to sixteen. An IOC/UNEP workshop in San José, Costa Rica, in August 1989 undertook a major review of the priorities for marine pollution monitoring, research, control and abatement in the region. At the workshop there was agreement on the complete integration of IOC and UNEP marine pollution activities in the region by means of a comprehensive new programme. At the second meeting of experts, held in Kingston, Jamaica, in June 1989, work was completed on the drafting of a new protocol to the Cartagena Convention on specially protected areas and wildlife so that it could be submitted for adoption at the Conference of Plenipotentiaries scheduled for Kingston in January 1990. The evaluation of the development and achievements of the Action Plan was completed, and a draft of a long-term strategy was prepared for discussion in January 1990 at the Eighth Monitoring Committee and Fifth Intergovernmental Meeting, in Jamaica.

#### East Asian Seas region

105. The Association of South-east Asian Marine Scientists, formed with the encouragement of UNEP, held its first General Assembly and adopted its Charter in February 1989. The Association will help to improve communications between the regional seas programme and the scientists of the region. The third meeting of experts on the East Asian Seas Action Plan was

held in February 1989 to review the scientific problems and priorities under the Plan, to evaluate the results of the regional projects, and to recommend new activities within the Plan. After a delay due to the illness of the first co-ordinator, the regional task team on the effects of expected climatic changes began its work in 1989 and should complete its report in 1990.

106. The eighth meeting of the Co-ordinating Body of the Seas of East Asia, held in June 1989, reviewed progress within the East Asian Seas Action Plan and proposed the reappraisal and revision of the Plan in view of the many developments pertaining to the environment in the past decade. As a response to this decision, a high-level consultants' mission for the reappraisal of the Action Plan was conducted in December 1989, the report of which is to be presented and reviewed at the meetings in 1990. As a possible legal framework for the Action Plan, a draft convention and related protocols were prepared in 1989 for review by a meeting of experts early in 1990.

#### South-East Pacific region

107. A full schedule of activities continued under the Action Plan for the Protection of the Marine Environment and Coastal Areas of the South-east Pacific, including workshops, seminars, training courses and consultant missions. The region hosted the inter-regional Workshop on Regional Co-operation on Environmental Protection of the Marine and Coastal Areas of the Pacific Basin (Viña del Mar, Chile, 7-10 August 1989), at which participants from the South-east Pacific, South Pacific and East Asian Seas regions discussed pollution monitoring and control, sea level rise and climate changes, and the economics of environmental protection. To review the results and achievements in phase one of the Research and Monitoring Programme of the South East Pacific (CONPACSE), an international seminar was held in Cali, Colombia, in September 1989. This was followed by the Experts Meeting at which the development and achievements of the Action Plan during the present biennium were analysed and the workplan for 1990-1991 was discussed. The Fourth Intergovernmental Meeting on the Action Plan and the first meeting of the Contracting Parties to the Lima Convention for the Protection of the Marine Environment and Coastal Areas of the South-east Pacific (held in Colombia in September 1989) approved the work plan and agreed to reorient the Action Plan to ensure that the limited financial resources will provide the maximum benefit for the region.

### Red Sea and Gulf of Aden region

108. In its decision 15/25 the Governing Council requested the Executive Director to take the necessary measures, in co-operation with IMO and relevant regional organizations, to prepare an inventory of available equipment and expertise, which could be made available for immediate response in any affected regional sea, for combating, surveying and containing pollution, as well as for shore clean-up, in cases of pollution by oil and other harmful substances. UNEP is co-ordinating with IMO the implementation of the actions requested. In this context, UNEP, in co-operation with IMO, provided substantive support to the Programme for the Environment of the Red Sea and Gulf of Aden (PERSGA) in organizing and conducting an expert meeting on combating marine pollution in the Red Sea and Gulf of Aden, held in Alexandria from 22 to 24 November 1989, to discuss inter alia possible subregional arrangements for co-operation in this field. UNEP agreed to assist PERSGA in the establishment and strengthening of a network of national institutions to participate in a regionally co-ordinated marine pollution monitoring, assessment and control programme within the framework of UNEP's Regional Seas Programme. UNEP, in co-operation with IOC and a group of scientists from the region, completed the draft report on the state of the marine environment in the Red Sea and Gulf of Aden.

### South Pacific region

109. The South Pacific Regional Environment Programme (SPREP) continued with a broad range of activities in 1989, including educational work supported by UNEP, and many activities funded from other sources. The problem concerning the status of SPREP was resolved with agreement that it should continue to be the South Pacific component of the Regional Seas Programme. UNEP support has concentrated on the development of an integrated regional marine pollution monitoring and control programme, and on the potential impacts of climate changes and sea-level rise. The task team on this latter topic prepared extensive reports and case-studies which were reviewed at an Intergovernmental Meeting on Climatic Change and Sea-Level Rise in the South Pacific held in Majuro from 17 to 20 July 1989. With the increasing concern about the effects of large-scale driftnet fishing, which has spread rapidly in the region, UNEP supported the attendance of island States from the South Pacific Forum at a meeting in Wellington, New Zealand, from 21 to 24 November 1989 to adopt a convention to prohibit driftnet fishing in the South Pacific.

### Eastern African region

110. To date, only France and Somalia have ratified the Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African region and its protocols. Nevertheless, a number of activities have been undertaken within the framework of the Action Plan. In Mauritius a report on the environmental effects of coral reef and coral sand extraction was prepared by UNEP, in consultation with the Government and, as part of a national oil spill contingency plan for Mauritius developed by IMO and UNEP in co-operation with the Government, an atlas of seas and coastal areas was published. A National Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the United Republic of Tanzania, prepared by UNEP in close collaboration with the Tanzania National Environment Management Council, was also approved and published. An FAO/IOC/UNEP mission visited research centres in the Eastern African region in order to ascertain their potential participation in the marine pollution monitoring project of the Eastern African Programme. As a contribution to a global review of the state of the marine environment sponsored by UNEP through GESAMP, a regional report for the Eastern African region was prepared by a task team. Another task team was established to assess the potential impact of expected climate changes on the coastal and marine ecosystems, and on socio-economic structures and activities in the Eastern African region. A popular booklet was prepared, dealing with the environmental problems of the Eastern African coastal and marine areas and the response to them through the Action Plan. UNEP, FAO and IMO assisted the Government of Somalia in assessing the hazards posed by the wreck of Melita 1, stranded off the Somali coast in October 1989, to human health, living aquatic resources, the ecosystem, economic activities, and to provide advice on measures to be taken. The first Intergovernmental Meeting on the Eastern African Action Plan, held in Nairobi on 8 and 9 November 1989, adopted the programme document, workplan and timetable for implementation in the biennium 1990-1991, confirmed the extension of the Trust Fund, and urged Governments to pay their arrears and ratify the Convention as soon as possible.

### South Asian Seas region

111. In view of positive statements presented by the countries of the South Asian region to the Governing Council at its

fifteenth session, and the confirmation of the countries' political commitment to the development of the South Asian Seas Action Plan, in 1989 work started to prepare the documents for a meeting of the technical and legal experts. The meeting, planned for 1990, is to review the legal framework for the Action Plan in preparation for an eventual intergovernmental meeting for the adoption of the South Asian Seas Action Plan. As its contribution towards the development of the Action Plan, UNEP, with the co-operation of the International Union for the Conservation of Nature and Natural Resources and IMO, undertook two projects in 1988-1989. In addition, three projects were being formulated with the co-operation of IOC and the South Asia Co-operative Environment Programme (SACEP).

#### The AMCEN Committee on Seas

112. Within the framework of the African Ministerial Conference on the Environment (AMCEN), UNEP continued to serve as the secretariat for the Committee on Seas and followed up on the implementation of the Committee's activities as adopted by the second meeting of the Committee, held in Cairo from 20 to 22 December 1988. Most of these activities are being implemented within the framework of Regional Seas action plans that are relevant to Africa. Concerning the intergovernmental meetings convened under these action plans, further efforts were made by the secretariat to increase the interest in organizing joint activities to contribute to the goals of AMCEN relating to the marine environment in Africa.

#### Living marine resources

113. On the basis of the first meeting of the Planning and Co-ordinating Committee of the Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals, held in late 1988, UNEP increased its efforts to co-ordinate and implement activities in this field, and decided to recruit an officer to act as secretary to the Plan. Since the incidental catch of marine mammals is one of the most significant impacts of driftnet fishing, several activities were planned to respond to this increasing problem, including support for the convention on driftnet fishing in the South Pacific.

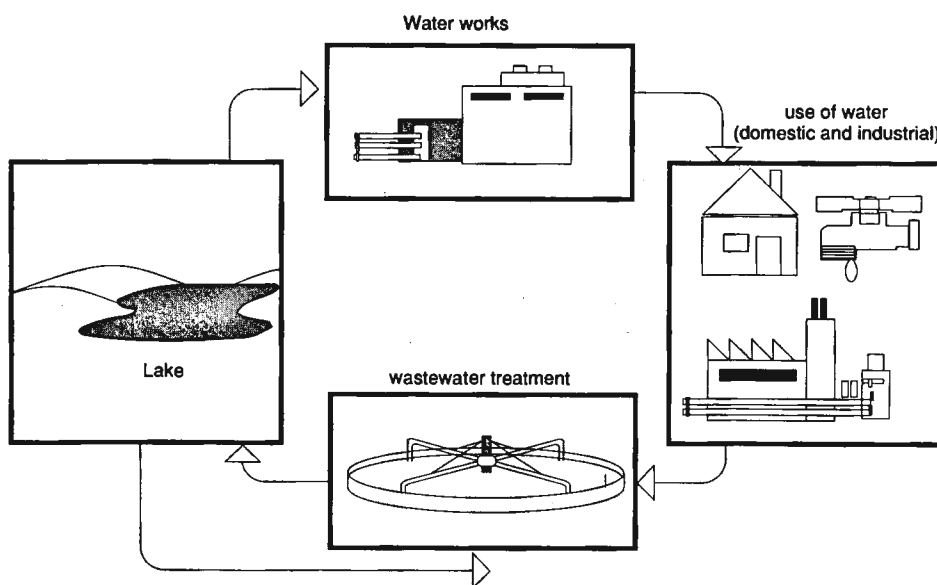
## WATER (Budget line 22)

114. UNEP's efforts related to fresh water in 1989 focused on the management of lake and river basins. UNEP, having been given the main responsibility for the development of the Zambezi Action Plan up to its approval in 1987, followed further developments for the implementation of the Plan. UNEP's concern with the development of large international basins, and with the Zambezi basin in particular, has been focused on an advanced decision support system for managing the basins. In co-operation with the International Institute for Applied System Analysis (IIASA), a computer-oriented programme for the Zambezi decision support system has been developed and tested. In July 1989, a training seminar was organized in Kariba, Zimbabwe, with the aim of demonstrating the system to professionals from the countries participating in the Zambezi Action Plan.

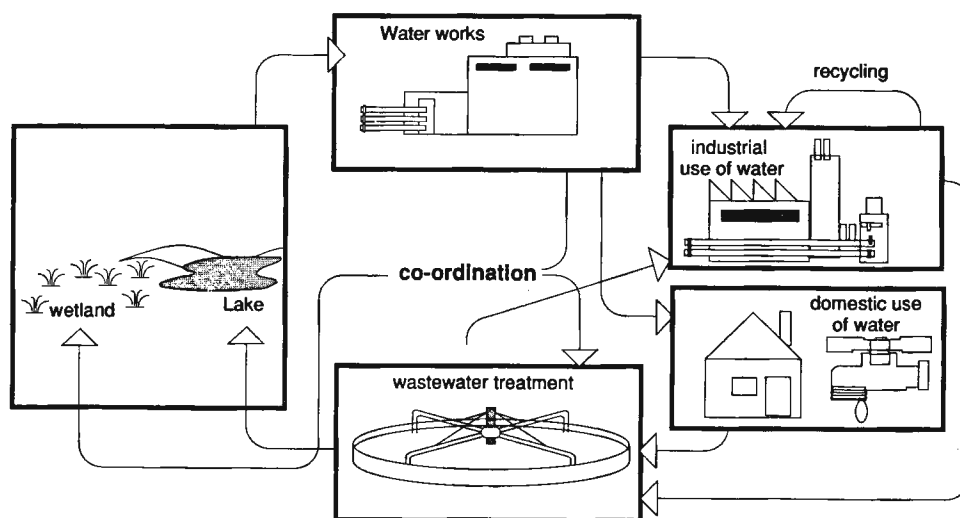
115. The second meeting of the AMCEN Committee on River and Lake Basins, which was held in Harare in April 1989, established priorities for the subregional activities in Africa.

116. In the Mekong delta, UNEP, jointly with the Mekong Delta Commission and UNEPCOM, supported activities in 1989 designed to increase food production through the improvement of water and land management, and the reclamation of acid sulphate soils. In 1989 a field laboratory was set up for the analysis of the samples and training purposes. Pilot farms were also equipped with computer facilities.

117. With regard to the protection and management of lakes, the co-operation between UNEP and the International Lake Environment Committee (ILEC) was intensified. Under a project to promote the environmentally sound management of lakes, the first volume in the series of Guidelines on Lake Management was published entitled Principles of Lake Management. Figure 4a illustrates an example of bad lake basin management, often seen in practice. A comparison is made with a better management strategy in Figure 4b. In the attempt to assist Governments to strengthen their policies with regard to the environmentally sound management of lakes, an expert group workshop on river/lake basin approaches to environmentally sound management of water resources was held in February 1989 in Bangkok. Representatives from the Lake Chad basin were invited to participate in the workshop, which was attended by some 50 scientists, mostly from Asia.

**Figure 4a****An example of bad lake management**

**Figure 4b**  
**Illustration of a good management strategy**



118. Following the decision of AMCEN to support the Lake Chad Basin Commission in order to halt the drying up of Lake Chad and use its waters and ecosystems rationally, during the biennium 1988-1989 the programme for environmentally sound management of inland waters (EMINWA) focused on the Lake Chad basin. At a meeting of national experts on the environment, held at Maroua, Cameroon, in November 1988, the Draft Reconnaissance Study for the Plan of Action for Environmental Management of the Lake Chad basin was submitted by UNEP. A resolution adopted by the second Conference of Ministers of Environment of the Lake Chad Basin Commission called upon UNEP to take all necessary measures to prepare a diagnostic study with a view to drawing up the Action Plan on the national management of environment of the Lake Chad basin. The diagnostic study carried out in response to this resolution was completed in October 1989 and presented to the Ministers of the Environment in November 1989. In August and September 1989, a training course for specialists from the Lake Chad basin was organized in the USSR, in co-operation with UNEP/COM. Provision was also made for organizing a seminar on the development of fisheries in Lake Chad.

119. As the impact of climatic change on water resources is becoming a serious problem, in 1989 more attention was paid to the mutual interactions between climate and water. An International Conference on Climate and Water, convened by WMO in Helsinki in September, was supported by the Government of Finland, UNEP and other international organizations. Two volumes published prior to the conference summarize the present knowledge of the relationship between climate change and water resources. In co-operation with the Water Research Center and the Ministry of Public Works and Water Resources of the Government of Egypt, UNEP supported an international seminar on climatic Fluctuations and Water Management in Cairo in December 1989, at which the impacts of climate change in the developing countries were studied. The seminar reviewed policy, management and the operational implications of climate fluctuations on water development. The recommendations of the seminar were subsequently submitted to the International Conference on Climate, held in Cairo in December 1989.

120. In view of increasing populations, the decline in food production and climate change, factors that already affect water management in the humid tropical countries, UNEP and Unesco in 1989 organized a colloquium on the humid tropics in

Townsville, Australia. Strategies for the forthcoming decade were discussed and recommendations for the Governments of some 60 tropical developing countries were prepared.

121. One year before the end of the International Drinking Water Supply and Sanitation Decade, under a joint WHO/UNEP project on control of drinking water quality in rural areas, an evaluation was carried out of the control of drinking water quality in Indonesia, Peru and Zambia. The results, published in a WHO report, are applicable to water quality control at the regional and subregional levels in the regions concerned. The second phase of the project will deal with Vanuatu and the United Republic of Tanzania. In 1989 a special workshop on the hygienic aspects of drinking water quality was jointly organized in Alma Ata by UNEP and the Centre for International Projects of the USSR. Twenty participants from developing countries attended the seminar, which may be repeated in 1990.

122. In the series of the guidelines, prepared jointly by UNEP and Unesco, a new publication Training Guidance for the Integrated Environmental Evaluation of Water Resources Development Projects became available in English, French and Spanish during the year under review. Further, UNEP published jointly with the UN Department of Technical Co-operation for Development, guidelines on the Assessment of Multiple Objective Water Resources Projects, emphasizing a multi-objective approach for the developing countries.

123. During 1989, UNEP, in co-operation with the International Training Centre for Water Resources Management (CEFIGRE), continued to organize training courses in environmentally sound water management. Two courses for English-speaking countries were organized in Bangkok, and one for French-speaking countries in Conakry. At the meeting of senior advisors to ECE Governments on environment and water problems, held in Geneva in 1989 and supported by UNEP, a draft code of conduct on accidental pollution of transboundary inland waters was finalized.

124. As the problem of water pollution is becoming increasingly grave, particularly in the developing countries, UNEP supported an international conference entitled "Industrial Wastewaters '89" organized by the International Association on Water Pollution Research and the University of Tampere in Nairobi in 1989 to discuss the problems of wastewaters in Africa.

**TERRESTRIAL ECOSYSTEMS MANAGEMENT (Budget line 23)**

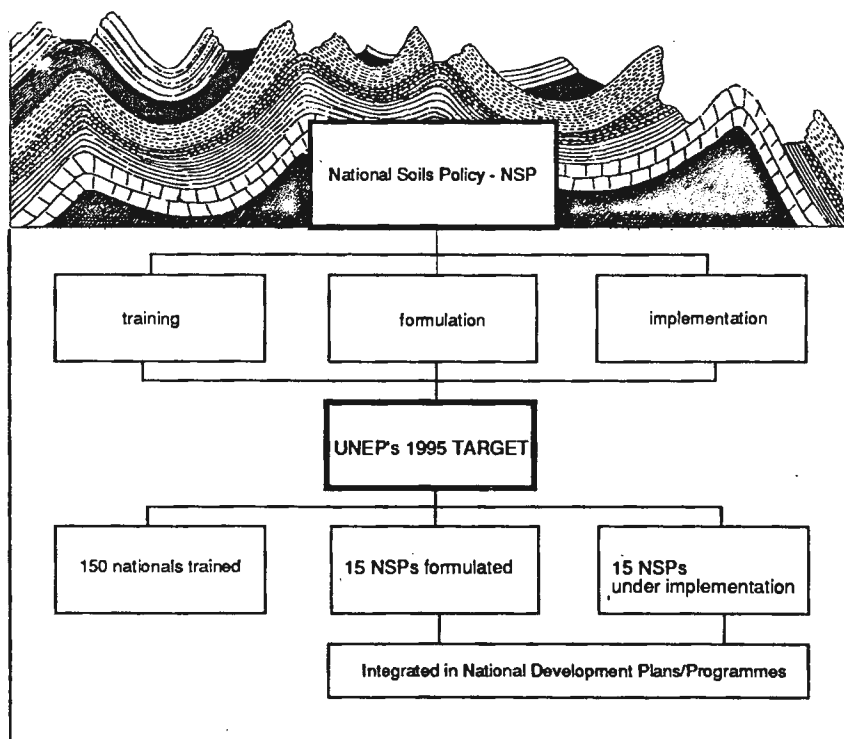
**Renewable resources management and conservation (Budget subline 231)**

**Soils**

125. Unsustainable agricultural practices, coupled with over-population and over-stocking have led to accelerated global human-induced soil degradation. World-wide soil erosion totals about 26 billion tonnes per year, equal to an annual loss of some 20 million tonnes of grain. Soil erosion rates in Africa alone have increased 20-fold in the last 30 years. Globally, 30 per cent of arable land is affected by water erosion in varying degrees, and 50 per cent of pasture land is affected by wind erosion. In the last 100 years, 30 per cent of the humus stock has been lost because of dehumification, while 50 per cent of the land under irrigation is affected by secondary salinization and/or alkalization in varying degrees. In general, soil erosion far exceeds the natural rate of new soil formation over one-third of the world's cropland. Such soil degradation is a dynamic process which needs continuous monitoring and assessment, with the main objective of designing and planning for sustainable land use.

126. Within the framework of the Plan of Action for the Implementation of World Soils Policy, adopted by the Governing Council in 1984, UNEP, in close collaboration with FAO and the International Society of Soil Science (ISSS) is assisting developing countries in the formulation and implementation of national soils policies. During 1989, advisory services were provided to the Governments of Syrian Arab Republic and Uganda on the formulation of national soils policies as part of their national development plans. Through the adoption of such plans, a firm commitment to the integrated and sound use of land and soil resources is achieved, along with associated legislative, educational and research inputs. To complement this activity, a training programme for the exchange of technology and experience in the formulation and implementation of national soils policies (NSPs) is being developed for four countries (see Figure 5).

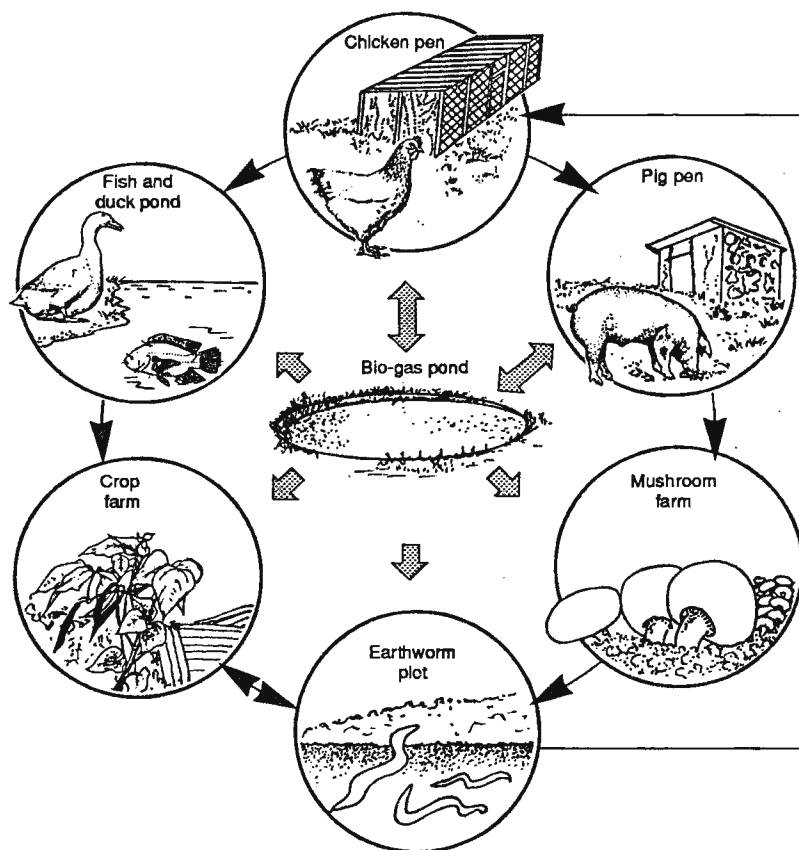
**Figure 5**  
**UNEP national soils policies**



127. In preparation for the implementation of Governing Council decision 15/24 on sustainable agriculture, in 1989 a UNEP mission to China visited seven villages containing over 100 ecological farms, and subsequently reported on examples of Chinese ecological farming. The Chinese model demonstrated in very practical terms how, through sustainable agricultural production, villagers could achieve self-sufficiency in food, fodder and energy and at the same time protect the environment. By so doing the villagers had increased the rate of biological energy utilization and reduced the demand for energy from outside the system; promoted food production and increased economic returns; reduced environmental pollution; promoted integrated farming and an interdependent organic system for food production and maintenance of soil fertility (an example of recycling of organic waste in the ecological farms of China is shown in Figure 6).

**Figure 6**

**Recycling of organic waste on the ecological farms of China**



128. Another project aimed at putting the World Soils Policy into force is the global assessment of soil degradation (GLASOD) project being implemented by the International Soil Reference and Information Centre in the Netherlands, in association with FAO and others. Initiated in 1987, this project also involves the promotion of international awareness on human-induced global soil degradation. Existing data and expert knowledge are compiled to produce a generalized map (1:10 million) of the global status of soil degradation, to be published in the latter half of 1990. The data will also be used by UNEP for the compilation of a world atlas of thematic indicators on desertification.

129. The first, still tentative results of the GLASOD project indicate that, of the total land surface of Latin America, approximately 14 per cent is affected by human-induced soil degradation. Table 1 illustrates the degree and extent of the various types of soil degradation expressed as a percentage of the total land area affected by human-induced soil degradation. In Figure 7 these data are summarized graphically.

Table 1

TENTATIVE DATA ON SOIL DEGRADATION IN LATIN AMERICA,  
derived from GLASOD  
(provided by the International Soil Reference and  
Information Centre, Netherlands)

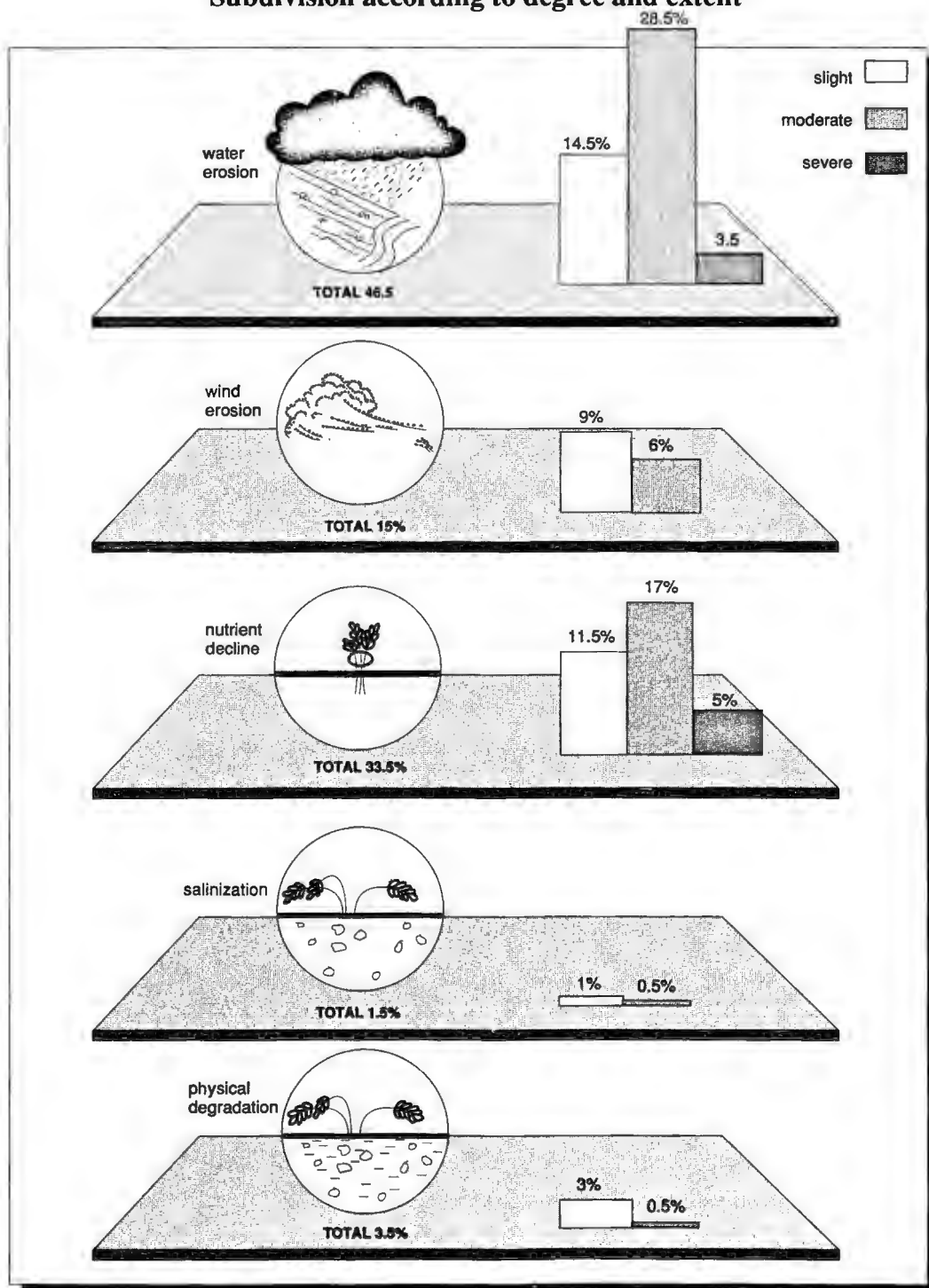
Approximately 14 per cent of the total land surface of Latin America is affected by human-induced soil degradation

A subdivision of these 14 per cent according to degree and extent of the various soil degradation types is as follows (extent expressed as a percentage of the total land area affected by human-induced soil degradation).

| type                                          | degree | slight | moderate | severe | total |
|-----------------------------------------------|--------|--------|----------|--------|-------|
| water erosion                                 |        | 14.5   | 28.5     | 3.5    | 46.5  |
| wind erosion                                  |        | 9      | 6        | 0      | 15    |
| nutrient decline                              |        | 11.5   | 17       | 5      | 33.5  |
| salinization                                  |        | 1      | 0.5      | 0      | 1.5   |
| physical degradation<br>(mainly waterlogging) |        | 3      | 0.5      | 0      | 3.5   |
| total                                         |        | 39     | 52.5     | 8.5    | 100%  |

Figure 7

## Subdivision according to degree and extent



130. Another activity under the GLASOD project is the compilation of a World Soil and Terrain Digital Database (SOTER), envisaged as a first step towards updating and modernizing the FAO/Unesco map of world soils. The SOTER pilot projects aim to produce more detailed (1:1 million) regional maps and computerized data bases, as well as internationally acceptable, compatible and operational manuals for soil degradation assessment. As a result of work carried out throughout 1989, LASOTER (covering parts of Argentina, Brazil and Uruguay) and NASOTER (covering parts of Canada and the United States) will be finalized early 1990. WASOTER (covering parts of Benin, Burkina Faso, Ghana, Niger, Nigeria and Togo) will start in mid-1990 and be financed mainly by the EEC. Funds are being sought for more pilot area projects (Middle East, Mediterranean area, Central Europe, South-east Asia).

131. As climate change and global warming will also have consequences for soil management, UNEP is working towards integrating these issues in its current and future activities related to soils. In this context, UNEP co-sponsored an international conference on Soils and the Greenhouse Effect in Wageningen, Netherlands, in August 1989. In December 1989, a workshop was held in Moscow organized by UNEP, UNEP/COM and IIASA, at which the concept and implications of global soil changes were discussed. A joint UNEP/IIASA/ISSS publication on the subject will be produced in 1990.

#### Forests and Other Ecosystems

132. The subject of tropical forests has been receiving increasing world-wide attention, as attested to by the long list of major conferences, symposia and scientific meetings, including the Paris Summit and the Tokyo Conference on the Global Environment and Human Responses Towards Sustainable Development. In 1989 alone, more than ten major gatherings were organized on the specific issue of tropical forests, including the International Conference on the Protection of Tropical Forests, in Vienna, September 1989; the International Conference on the Management of Tropical Forests, in Feldafing, Federal Republic of Germany, in January 1989; and the International Conference on Tropical Forests in Brussels, in November 1989. Even within the context of the activities of the Inter-Governmental Panel on Climate Change, several groups and sub-groups are dealing with the relationship between forests and climate change. The subject has also been addressed by major religious leaders.

133. Despite this growing interest, the level of destruction and degradation of natural forest ecosystems has not abated; on the contrary, it seems to be growing. In 1982, the Tropical Forests Resources Assessment, produced jointly by FAO and UNEP, estimated the total annual destruction of tropical forest ecosystems at 11 million hectares. Today, piecemeal information available indicates that the actual figure is closer to 20 million hectares per year. Furthermore, during the last biennium, forest fires have ravaged temperate forests in several developed countries. The new global assessment of forest resources being prepared by FAO will not be available until 1992, but preliminary figures for selected areas may be ready by mid-1991.

134. Since the official launching in 1985 of the Tropical Forestry Action Plan (TFAP), co-ordinated by the FAO, UNEP has continued its active involvement in the implementation of the Plan. Short-term consultants were sent on TFAP country missions to Bolivia, Jamaica and Peru. Within the same context, UNEP initiated collaboration with the Government of the United Republic of Tanzania in order to improve the conservation and management of the African ebony (Dalbergia melanoxylon), locally called the Mpingo. Following the consultants' missions, several project proposals were developed and are now included in the TFAP project list to be considered by international donors. UNEP is also preparing the launching of a fund raising campaign in collaboration with musicians and musical instrument manufacturers, as mpingo is used to produce high-quality musical instruments such as oboes, flutes and clarinets.

135. UNEP considers that there is an urgent need to develop methodologies to assess the real value of forests, as this is an important factor for any decision maker. An expert meeting held in Nairobi in early 1988 underlined this very need. Currently, the value given to forests is based mainly on primary timber value, while ignoring a wealth of other important goods and services produced by forests. Following discussions with the World Bank, FAO and the Forestry for Sustainable Development Program (FFSD) of the University of Minnesota, a Letter of Agreement was signed in 1989 between UNEP and FFSD to initiate the preparation of a practical manual. This initiative will be developed in close collaboration with the World Bank and FAO and will draw on the existing experience of forest economists working with other institutions.

136. Owing to the increasing demand for qualified experts to deal with the sustainable management of forests and the difficulty in identifying available expertise at short notice, a roster of consultants and institutions is now being completed, focusing on developing regions' needs.

137. In order to support education and public awareness activities, UNEP has contributed to the wildlife clubs of Kenya, assisting in their ongoing education programmes for young people, organized through their more than 2000 local clubs. UNEP staff also actively supported briefings for journalists, decision makers and planners in several fields including forestry-related matters.

138. UNEP's project for the development of a sub-regional programme on the natural potential and rational management of tropical and sub-tropical forest ecosystems in Central America is coming to an end with the preparation of a planning manual and a management plan for the Rio Macho Forest Reserve in Costa Rica. The reporting on the final stages of the project is expected for 1990. Within the context of the project on in-situ conservation of forest genetic resources, support for the conservation of Prosopis cineraria in the Republic of Yemen was provided under AMCEN. Following the establishment of the African Committee on Forest and Woodlands, consultants were sent to Zambia and Nigeria to identify mechanisms to reinforce afforestation and reforestation programmes. The final reports are still to be submitted to the corresponding governments for approval.

139. At the second meeting of the African Committee of Forests and Woodlands, held in Nairobi in February 1989, discussion covered the implementation of forestry-related activities in the region, co-ordination with TFAP and other related programmes, and the scope and results of the missions carried out so far.

140. Temperate and boreal forest are also affected by mismanagement, air pollution and other pressures. UNEP has been supporting a programme developed by the Polish Botanical Garden for evaluating the degree of air pollution through pine needle analysis and mapping. The final report was distributed to scientists and its findings were linked to the project for the assessment and monitoring of air pollution effects on forests in the ECE region, according to which approximately 50 per cent of the forests in Europe are suffering from different levels of degradation owing to air pollution.

141. With regard to mountain ecosystems, it is estimated that about 10 per cent of the world's population live in mountain or highland areas, and close to 40 per cent depend heavily on resources and services provided by the highland areas. In Bolivia and Peru, for example, over 70 per cent and over 40 per cent of the respective populations live in areas 2,500 metres above sea level. In this context, in 1989 UNEP - supported by a trust fund from the Federal Republic of Germany - in collaboration with the Government of Peru - continued the implementation of an integrated pilot project on environmental management and the protection of Andean ecosystems in Cajamarca in the Northern Sierra. Through this project, with the support of the local Development Corporation and the University of Cajamarca, local farmers have been encouraged to establish nurseries, apply afforestation programmes, carry out soil conservation and management, and improve irrigation, human and animal health and community development. The project is expected to continue until 1991.

#### Wildlife and protected areas

142. The irretrievable loss of biological diversity is becoming a major international environmental issues. Although the world's wildlife represents a multi-faceted resource - a vast reservoir of products, actual and potential, all of which can contribute directly to human welfare - wild animals and plants and their habitats are being destroyed or depleted at an alarming rate. Unless drastic conservation action is taken, an estimated million species or more, most of them unknown, are in serious risk of extinction in the next 20-30 years.

143. The greatest threat to wildlife is the rapid destruction of the world's ecosystems, especially in the tropics, and the disappearance of wildlife habitats, buried beneath agriculture, cities, industrial developments and dams, or destroyed by pollution, overuse or erosion. As the global population continues to grow, the pressure on the world's biological resources is becoming increasingly intense. A large number of wildlife species are also threatened by excess hunting, poaching and illegal trade. If the magnitude of change suggested by current climate models turns out to be accurate, global warming would change the location, size, and character of wildlife habitats at an unprecedented rate. Many species will not be able to adapt quickly enough and, consequently, extinctions will be widespread because habitats have shifted,

shrunk or disappeared. The secondary effects of global climate change could themselves become primary threats to biological diversity.

144. The problems posed by the destruction of ecosystems and the rapid decline and disappearance of species call for comprehensive programmes integrated into national development planning and aimed at conserving the widest possible biological diversity – that is to say, the full range of the world's animal and plant species. Such programmes must include the establishment of areas in which representative biological communities can be protected and managed in their entirety.

145. UNEP has approached this problem by encouraging Governments to apply to non-protected lands the conservation principles outlined in the World Conservation Strategy and the World Charter for Nature; promoting the formulation and implementation of regional and national conservation strategies for integration into national development plans; taking measures to safeguard particular habitats as protected areas; establishing protected areas and incorporating the maximum amount of biological diversity into existing and future protected areas; providing secure scientific management for existing and future protected areas and their wild species; taking measures to protect particular species or groups from destructive exploitation; and encouraging the ratification and application of global and regional conservation conventions.

146. Efforts to conserve biological diversity have produced impressive results: an extensive network of protected areas in some 120 countries has been created, several international conventions, including those on trade in endangered species, wetlands, world heritage sites and migratory species, are being implemented and a new global convention on conservation of biological diversity is being elaborated. These activities must be strengthened and expanded in the years to come.

147. In the mid 1970s, UNEP, IUCN and WWF embarked on drafting a framework for international action: The World Conservation Strategy. The original World Conservation Strategy is now a decade old, and its successor – the World Conservation Strategy for the 1990s – is currently being prepared, with the assistance of UNEP, to provide an updated and expanded statement on living resource conservation and sustainable development. This new framework of action will relate conservation principles to factors such as ethics, economics,

population, use of traditional knowledge and other topics that have become prominent over the past decade. The framework will focus on solutions and provide guidance on key actions to achieve lasting conservation and development at the local, national and international levels.

148. The Governing Council in its decision 15/34 called for the implementation of existing legal instruments and agreements in a co-ordinated and comprehensive manner and for the adoption of a further appropriate international legal instrument, possibly in the form of a framework convention. To this end, it requested the Executive Director to convene additional working sessions of the Ad Hoc Working Group of Experts on Biological Diversity "to consider the technical content within a broad socio-economic context of a suitable new international legal instrument and other measures that might be adopted for the conservation of the biological diversity of the planet."

149. In September 1989, the Executive Director convened a small group of top-level scientists to assist in the preparation for the second session of the Ad Hoc Working Group of Experts on Biological Diversity. The Executive Director has also been guided in this matter by the Ecosystem Conservation Group (comprising UNEP, FAO, Unesco and IUCN) which, at its sixteenth general meeting in Paris, September 1989, considered the substance of the Governing Council's decision. At this general meeting the conservation of biological diversity dominated the agenda. Further consultations on various aspects of biological diversity were held with a selected number of secretariats of international conventions. A large amount of ground has already been covered by the work of the Ad Hoc Group of Experts in establishing a common understanding of the scope, aims, objectives and basic scientific principles that should form the basis of a new convention. However, further clarification and work are necessary, and UNEP will continue its activities in this important sphere.

150. International wildlife trade, worth billions of dollars annually, has contributed substantially to massive declines in the numbers of many species of animals and plants. Throughout 1989, UNEP continued to provide the secretariat for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The Convention, which entered into force in 1975, prohibits or restricts trade in some 20,000 endangered species. As more and more countries subscribe to it, the market for endangered wildlife products is being curbed by

a worldwide chain of national and scientific management authorities. In 1989, seven additional States acceded to CITES, bringing the total membership to 104.

151. In October 1989, the seventh meeting of the Conference of the Parties to the CITES Convention was held in Lausanne, Switzerland, where some 800 participants from more than 100 countries, including 94 Parties, discussed how to save endangered wild animals and plants from illegal trade and extinction. The meeting acted on 160 proposals to control trade in more than 200 species. Conservation of the African elephant was the major topic of discussion at the meeting, with heated debates about the best means of ensuring the continuing survival of this keystone species. Following a long debate on the complex and controversial question, the meeting approved the listing of the African elephant in Appendix I of the Convention, effectively banning all international commercial trade in products derived from the African elephant. Joining the African elephant on Appendix I were more than 60 species of a world-famous orchid, Paphiopedilum, the slipper orchid or lady's slipper. The measure is intended to put a stop to the burgeoning illegal trade in wild orchids that is threatening many orchid species with extinction in the wild.

152. UNEP also continued to provide the secretariat for the Convention on the Conservation of Migratory Species of Wild Animals, with support from the Federal Republic of Germany. However, the Convention itself is funded totally from contributions from its Parties. With the addition of Finland and Panama, the Convention now has 29 Parties, and Burkina Faso has also deposited its instrument of accession. The wider geographical coverage created by increased membership is most significant in terms of migration routes and ranges. The Convention provides a framework for co-ordinated research and conservation measures, such as habitat protection and hunting regulation. Parties to the Convention have committed themselves to protecting those endangered migratory species listed in Appendix 1 of the Convention. The principal mechanisms of conservation under the Convention are Agreements, listed in Appendix II, between all the range States of a species or separate populations of species, whether the States are Parties to the Convention or not. It is disappointing that no such Agreements have yet been concluded, despite four years' work by Parties and the Secretariat.

153. UNEP participated in an International Symposium on Western Palearctic Geese, held in Kleve, Federal Republic of Germany, in February 1989 and convened by the International Waterfowl and Wetlands Research Bureau. The main outcome of that meeting was a firm scientific basis for co-ordination with respect to hunting seasons, protected wetland areas and changes in agricultural practices in so far as they relate to the particular and critical needs associated with migration of the geese. These considerations will be important aspects of an Agreement on Western Palearctic Waterfowl and associated management measures being developed under the Convention on Conservation of Migratory Species of Wild Animals.

154. During 1989, UNEP continued to support the UNEP/IUCN/WWF World Conservation Monitoring Centre, which produces assessments of distribution and abundance of wildlife species, including mammals, birds, amphibians and reptiles, insects and plants - among them, those of economic value. UNEP has also continued its support for the conservation of representative biotic communities by supporting inventories of habitats and their conservation status. The reviews of the systems of protected areas and the extent of coverage of the main natural vegetation types in the Afro-tropical and Indo-Malayan realms, for instance, are expected to stimulate action at the national level.

155. The pressure on Africa's natural resources and biological diversity, particularly in arid and semi-arid areas, has been steadily increasing during the last two decades and, as a consequence, the maintenance of productivity and biological diversity is at risk in many of these areas. In response, UNEP and the African-Caribbean Institute (ACI) commenced a joint project in 1989 to analyse and evaluate the management of biological diversity in Eastern Africa in relation to natural resources management. The project is expected to yield information on how to make such management effective, and will help national institutions to translate this information into policy decisions.

156. The UNEP/FAO project on Wildlands, Protected Areas and Wildlife Management in Latin America and the Caribbean has been considered very successful and by all accounts has been well received in the region. Under the project a large number of specific technical activities have been carried out, supported by the Latin American Service Network on Wildlands, Protected Areas and Wildlife Management. The project has strengthened

regional professional and technical capacities and facilitated co-ordination of activities and the exchange of technical expertise within the region. The project has enhanced the capacity of Governments to manage wildlands, protected areas and wild species of value for long-term sustainable economic and social development and has assisted in the implementation of the World Conservation Strategy.

157. During 1989, under this project, more than 200 technical and professional persons from all countries of the Latin American and Caribbean region working in the field of wildlands, protected areas and wildlife management received high-level training at courses and workshops in several priority subject areas for the region. Technical documents resulting from each of these workshops are widely used in policy formulation and training. These publications have been widely distributed in the region and have contributed significantly to progress in each of the technical areas and to an increase of programmes and projects in most of the countries.

158. Host countries have made valuable contributions to each of the events carried out under the project, and there have been numerous technical exchanges among countries. Within the context of technical co-operation among developing countries, assistance has been provided to twelve countries in the region for the development of conservation strategies, planning of systems of wildland areas, planning of national parks, management of border parks, management of wildlife and in-service training. In addition, study visits have been made by specialists to learn from experiences of other countries. The technical bulletin, Flora, Fauna and Wildlands has been widely distributed to 1,500 specialists and institutions in the region. The bulletin has been widely acclaimed for its contribution to wildlands, protected areas and wildlife management and has received strong support from countries.

159. During 1989, UNEP continued its close collaboration with Unesco in the implementation of the Action Plan for Biosphere Reserves for more effective conservation of biological diversity, the establishment of a world-wide network of operational biosphere reserves in selected representative areas of the world's biogeographic provinces, the preparation of management plans for them and the better training for biosphere reserve managers. Biosphere reserves, which are extremely important for the conservation of biological diversity, combine a core area under strict protection with 'buffer zones' for

research, monitoring, management, education and training, and for the sustainable use of natural resources. As of May 1989 there were 276 biosphere reserves in 71 countries.

160. UNEP supported the attendance of several participants from developing countries in the second International Botanic Gardens Conservation Congress, organized in 1989 by the IUCN Botanic Gardens Conservation Secretariat and held in Saint-Denis, Reunion. The theme of the Congress was "Tropical Botanic Gardens: Conservation and Development". Over 200 of the world's leading botanic garden directors and managers discussed plant conservation, focusing world attention on the needs for plant conservation in botanic gardens world wide, especially in the tropics, through the implementation of the Botanic Gardens Conservation Strategy.

161. Wildlife management was one of the eight themes included in the environmental training manual for Girl Guides and Scouts. This was the output of a one-week workshop at UNEP headquarters in Nairobi in October 1989, attended by all regional Programme Directors for the World Organization Scout Movement representing five continents and by representatives from World Association of Girl Guides and Scouts. The manual will be used to improve awareness of environmental management and wildlife conservation among the 26 million young scouts and guides worldwide.

162. The Joint Academy Committee on Global Ecology, established towards the end of 1988 by the United States National Academy of Sciences and the Academy of Sciences of the USSR, held its first meeting in Moscow in June 1989. The establishment of this new committee, composed of the two countries' leading experts in a variety of scientific disciplines, is an event of considerable interest to UNEP. The joint committee will consider the scientific and policy aspects of a wide range of issues which relate to some of the matters presently preoccupying UNEP, such as global changes in biological diversity and the theoretical basis for understanding ecological change.

#### Genetic Resources

163. In most developing countries and in large parts of some developed countries, economic capital is based mainly on environmental resources: climate, soil, water and biological diversity. Long-term economic development therefore depends on

maintaining, if not increasing these stocks and enhancing their ability to support agriculture, forestry, fisheries, mining, and tourism.

164. The importance of plant, animal and microbial diversity to sustainable development cannot be over-emphasized. Over many thousands of years different human societies recognized that certain plant, animal and microbial species were more suitable to meet their basic needs. People domesticated and used those individuals within a given population that had characteristics that better met requirements under different environmental conditions. However, very few species of plants, animals and micro-organisms have been domesticated by mankind. During domestication, the resulting varieties were brought into contact with their wild relatives with which they continuously hybridized and exchanged genes. As a consequence, thousands of versatile varieties with broad genetic diversity and increased adaptability for long-term survival and production in hostile environments have accumulated. The unique genetic qualities of these varieties and breeds are associated with their ability to survive and produce in different environments. The genetic material contained in these varieties and their wild relatives is essential for boosting, stabilizing and continuing to improve sustainable agriculture, forestry, etc. Even if the precise functions or uses of some natural resources are not yet known, they play a crucial role in the bioproductivity of ecosystems and in the maintenance of their ecological processes. The natural vegetation cycles nutrients, helps to stabilize the climate, provides a sink for carbon dioxide, aids in flood control, filters pollutants and controls soil erosion.

165. Yet the pressures on biological diversity and hence on genetic resources are intense and are increasing rapidly as a result of spiralling population growth, poverty, the degradation and destruction of the world's most diverse ecosystems, the excessive use of a limited number of high-yield varieties, the over-exploitation of selected species of commercial or aesthetic value, the careless application of polluting technologies and the failure to take into account the multiple values of biological diversity in development planning processes. An average loss of 100 species per day and the possible extinction of perhaps a quarter of the Earth's total biological diversity within the next 20-30 years has been estimated by most experts. Anticipated human-induced changes in the atmosphere; such as global warming and depletion of the ozone layer, could also disrupt biological communities, shift

their ranges, and accelerate global rates of extinction. In the meantime, the world's population has now increased to over 5 billion, and could more than double in the next 100 years. The projected loss in genetic diversity could cripple the genetic base required for the continued improvement and maintenance of the currently utilized species and deprive us of the potential to develop new species. This situation would also make it impossible or excessively costly for countries to meet their development objectives in a sustainable manner.

166. To increase agricultural production, high-yield plant varieties and animal breeds were developed. At present, man tends to rely on a limited number of high-performance varieties for his food, fibre, timber, etc. and the use of traditional varieties is being abandoned with their consequent loss. The West's food mountains rest on a tiny pinhead of genetic stock. Half the Canadian prairies are planted with just one variety of wheat; the entire soybean industry in the United States stems from six plants from one place in Asia. Such uniformity is dangerous, for a single pest or disease could wipe out a nation's harvest. The Green Revolution has brought similar risks to developing countries.

167. Owing to the intensive selection for high performance and uniformity, the genetic base of the new crops has been dangerously narrowed, often sacrificing resistance to pests and disease in the process. This has made agriculture highly dependent on chemicals that are often beyond the purse of the poorer farmer. Genes from hardier wild relatives can give back this lost resistance. For example, by the mid-1970s genetic improvements in Asia had increased wheat production by \$2 billion and rice production by \$1.5 billion a year by incorporating dwarfism in both crops. A useless wild wheat plant from Turkey was used to give disease resistance to commercial wheat varieties, and this was worth \$50 million annually to the United States alone. One gene from a single Ethiopian barley plant now protects California's \$160 million annual barley crop from yellow dwarf virus. Major cultivars of crops improved by wild genes have a combined farm sales value of \$6 billion a year in the United States. An ancient wild relative of corn from Mexico, which is a perennial that is resistant to seven major corn diseases and which can grow at high elevations in marginal soils, can be crossed with modern annual corn varieties giving rise to potential savings to farmers estimated at \$4.4 billion annually worldwide.

168. In medicine, of all the useful plant-derived drugs only 10 are synthesized in the laboratory and the rest are still extracted from plants. In the industrialized world the retail value of plant-derived drugs was estimated at \$43 billion in 1985 and it is estimated that the Western market for herbal drugs could reach \$47 billion by the year 2000. Today, with advances in plant biotechnology and the availability of new and precise screening tools, interest in plants as a source of raw materials for developing new medicinal products is expanding. In 1960, a child suffering from leukemia had only one chance in five of survival. Now, the child has four chances in five, due to active substances discovered in the rosy periwinkle, a tropical forest plant originating from Madagascar. Commercial sales of these drugs from this one plant now total around \$100 million a year world-wide.

169. Given the very great benefits that are attributed to just these small portions of the total biological diversity, the total benefits that are likely to be lost through the absence of conservation action will certainly be great. There is great scope for a wider view, beyond today's major crops, animal breeds and medicinal plants.

170. Despite such warnings, the emerging awareness of the need for urgent action to conserve and develop the world's genetic diversity is not yet reflected in well-organized national and international programmes to meet the need. Few countries have tried to prepare national conservation strategies or guidelines to promote genetic diversity. Conservation programmes are scarce; so are the co-ordinating, planning, training, education, research and other resources needed to make them work effectively. International assistance and guidance available to developing countries wishing to start up such programmes are, at best, modest. The need to co-ordinate global efforts to reverse the trend towards species loss has never been clearer, and UNEP has been trying to provide an answer with a range of activities in keeping with the organization's catalysing and co-ordinating mandate.

171. UNEP's interdisciplinary programme on the rational use and conservation of the terrestrial environment and its genetic resources embraces a large, complex and growing set of shared activities and programmes, implemented in collaboration with national Governments, United Nations organizations and NGOs. The strategy that UNEP has adopted to promote the conservation of the world's genetic resources and diversity is action-

oriented. UNEP is working towards a reliable and universal appraisal of the status of all plant, animal and microbial genetic material, paying special heed to species with established socio-economic value. UNEP is raising the level of awareness among national authorities and the public at large concerning genetic erosion and loss of biological diversity. Finally, the strategy calls for the development of appropriate ways of maintaining maximum genetic diversity to improve agriculture, forestry, health, industry and the environment. In 1989, UNEP supported a matched set of interlocking activities that pursue and reinforce this strategy.

172. UNEP also supports the International Board for Plant Genetic Resources (IBPGR), whose global network of gene banks houses the world base collection of crop germplasm. With IBPGR, UNEP continued to support a programme for the ecogeographical surveying, collection and ex situ and in situ conservation of the wild relatives and primitive cultivars of crop plants threatened with extinction in priority areas in developing countries. UNEP continued to support the international programme for the exploration, collection, evaluation and conservation of crop plant and tree genetic resources, co-ordinated by IBPGR. With UNEP support, the IBPGR organized and assisted in 12 missions to collect land races and primitive cultivars and 22 missions to collect wild relatives of crop plants.

173. Collaboration continued between IBPGR and UNEP in the area of human resources development through the training of personnel working in gene banks of developing countries. In 1988/89, fellowships were provided for seven trainees from developing countries to attend a course on conservation of plant genetic resources at the University of Birmingham, United Kingdom. Eight candidates from developing countries were trained in the conservation and assessment of barley genetic resources at the VIR institute, Leningrad, and the Kuban experimental station at Krasnodar. Nine scientists from North Africa were trained in conservation and characterization of food legumes germplasm at the Behtem gene bank, Egypt. The training included seminars and field trips to study principles of cataloguing accessions, methods of field observation, field register books and documentation, methods of screening for promising material to be used in breeding, evaluation of accessions for stress tolerance, seed conservation technology and breeding research.

174. With FAO, UNEP in 1989 continued to undertake pilot projects for the conservation of forest and animal genetic resources. UNEP concentrates particularly on promoting the use of indigenous plant genes and animal breeds in the rehabilitation of arid and semi-arid lands. With FAO, UNEP sponsors five pilot projects for the conservation of endangered animal breeds in Ethiopia, Gambia, Kenya, Pakistan and Sudan. The two organizations also support the expansion and continuous updating of the pilot regional data and gene banks for animal genetic resources in Africa, Asia and Latin America, as well as the creation of a global data bank, in collaboration with key national institutions.

175. The emergence of biotechnology has been seen as the direct channel for developing countries to tap their enormous genetic diversity for economic development. Recent progress in biotechnology seems to promise mankind a great deal. It is now possible to understand better how gene expression works. This knowledge is being used to speed the development and use of germplasm in modern crop varieties and animal breeds and to develop new varieties in a far shorter period. Using this knowledge and germplasm, biotechnology is likely to contribute to many key development efforts in agriculture, forestry, health, energy, mining, industry and environmental management. In fact, if it is appropriately directed, biotechnology has the greatest potential for sustainable development. It is believed that in the future it has the potential to make a far greater impact than the Green Revolution, with far-reaching implications. This reinforces rather than diminishes the need to maintain the richest possible pool of genes.

176. As the potential of genetic resources can best be exploited when they remain freely accessible to all users and when the information and technology on how to use them is transferable to all, the Microbiological Resources Centres (MIRCENS) network conceived by UNEP in 1974 could legitimately be considered the first international attempt to extend biotechnology to developing countries. UNEP and Unesco have established a network of six regional Microbiological Resources Centres (MIRCENS) which serve as centres of excellence for microbial conservation and utilization, research and training in developing countries.

177. To promote the use of environmentally sound biotechnologies for bioconversion of agricultural residues and surpluses into useful products in developing countries, in 1989

UNEP continued to provide catalytic, technical and financial support to both Bangkok and Guatemala MIRCENS, both of which focus on the use of microbial technologies to strengthen rural economies through waste recycling for the production of food, feed, energy and organic fertilizers. At Bangkok MIRCEN, work is in progress to demonstrate on a pilot scale the viability of bioconversion of waste-water effluents generated from the cassava/power alcohol production plant (established with support from UNEP) into biogas, rather than have such effluents discharged into water streams. Guatemala MIRCEN is engaged in screening and training programmes for the bioconversion of coffee processing by-products (pulp) - through solid-state fermentation using local microbial strains - into useful products that can be used as ingredients in concentrate formulations for animal feed, with the aim of releasing equivalent amounts of cereal grains (mainly corn) for human consumption.

178. In the past, much of the increase in agricultural production resulted from bringing more land into cultivation. During the last two or three decades it became clear that most of the future gains in the production of food and other agricultural commodities must come from increasing the productivity of existing agricultural land. Instead of adopting biologically based and ecologically sound methods of increasing agricultural productivity, farmers are forced to use methods that give immediate returns; the environment becomes degraded and the investments needed to conserve natural resources become unattractive.

179. One problem of major concern to UNEP is the widespread application of potentially polluting nitrogen fertilizers. Desiring to contribute to the attainment of food security without resource depletion or environmental degradation, throughout 1989 UNEP continued its support to the Cairo, Dakar, Nairobi and Porto Alegre MIRCENS and to the Sudan to collect, evaluate, preserve and periodically test Rhizobium strains and to produce and distribute high-quality legume inoculants to small farmers for field testing on a pilot scale. With UNEP support, advisory services were provided to a number of developing countries for experimental testing of legume inoculants and the on-site training of national expertise in biological nitrogen fixation technology. A national laboratory for inoculant production was set up in the Sudan with support from the Arab Gulf Programme for United Nations Development Organizations (AGFUND) and UNEP, with the aim of producing inoculants for 20,000 hectares in 1990.

180. The use of micro-organisms in agriculture, industry and medicine has already contributed much to economic development. However, although new biotechnologies have generated great potential for the systematic use of micro-organisms, the relative inaccessibility of information about microbial genetic resources is now an important constraint on their use in scientific and commercial endeavours, particularly in developing countries. With support from UNEP and the Commission of the European Communities there were a number of developments in 1989, leading to the expansion and increased use of the International Microbial Strain Data Network (MSDN) services as a global referral system for information on microbial strains and cell lines. In 1989 the number of users increased to 360; of these the industrial community constituted 30 per cent. The geographical spread of the Network has increased steadily and countries in less economically favoured regions of the world were able to achieve electronic links with the Network.

181. The MSDN Central Directory, from which scientists and other users can locate microbial strains or cultured cell lines with specific traits for biotechnological applications continued to grow. There are now seven related databases linked to the Network, including the American Type Culture Collection, the Hybridoma Data Bank, the National Collection of Yeast Cultures in the United Kingdom, the European Collection of Animal Cell Cultures and the Central European Database of Microbial Strains Data. Their databases and services are now available through MSDN either via gateways or electronic links between these databases and MSDN computers, or through the storage of their data directly on the MSDN computer. With UNEP support, in 1989 MSDN held three training courses on the use of computers to manage data on microbial strains. These were in Guatemala (Guatemala MIRCEN), the USSR and Egypt (Cairo MIRCEN). UNEP also continued to support the World Data Centre on Micro-organisms, now housed in Tokyo, which has set up a global register of information and research on microbial strains.

182. Like many technologies, however, biotechnology may not be without negative ecological and socio-economic consequences. It embodies many policy problems and challenges, particularly for developing countries. These include the fact that biotechnology is advancing into areas that depend on the introduction of genetically engineered organisms into multiple locations and environments in the absence of appropriate regulatory control. Such technology is generated abroad, with all that this entails

in terms of control, and it has implications for primary commodities, generally concerning export trade, as a result of overproduction or substitution. The limited technology transfer and the lack of knowledge and experience could further disadvantage developing countries, as biotechnology is science- and research-intensive. This could have enormous environmental and socio-economic impacts, which require thorough assessment. The joint Working Group on Biotechnology Safety of the United Nations Industrial Development Organization (UNIDO), WHO and UNEP convened its fourth meeting in December 1989 to review recent developments in environmental releases and risk assessment in biotechnology, with the aim of maximizing the benefits and minimizing the risks that are likely to be associated with biotechnology applications.

#### Bioproductivity research

183. A new project, entitled Environmental Changes and the Productivity of Tropical Grasslands, has started in co-operation with King's College, London. Under this project, physiological research will be carried out into the effects of CO<sub>2</sub> enrichment and soil moisture stress on the productivity of tropical grasslands. On two tropical savannah sites closed chambers are being set up in order to carry out CO<sub>2</sub> gas trials.

184. The ninth UNEP Training Course on Techniques in Bioproductivity and Photosynthesis was held in Harare in January 1989. Twenty-five African students, mainly from Zimbabwe, were trained.

#### Lithosphere (including biogeochemical cycles) (Budget subline 232)

185. UNEP's activities under this sub-programme are intended to support basic research on environmental impacts of mining as well as on the biogeochemical cycles of phosphorus, sulphur and carbon and the environmental problems relating to them. The target is to provide decision makers with sound research results in order to enable them to address environmental problems properly.

186. Progress has been achieved in the UNEP/Unesco/UNEP/COM project "Geology and Environment". The two-volume publication The impact of mining on the Environment became available during 1989, as well as Volume I (Water Management and the

Geoenvironment) of the three-volume manual being produced under the project. Volume II (Mining and the Geoenvironment) and Volume III (Geology and Land-Use Planning) were under preparation. Hydrological Principles of Groundwater Protection and Landslides and Mudflows, prepared jointly by Unesco, UNEP and UNEPCOM, also became available in 1989. The manuals form a solid foundation for further programme activities concerning environmentally sound groundwater resources development.

187. In May 1989 a workshop of the SCOPE/UNEP sulphur unit, held in Toronto, Canada, dealt with acidification of lakes due to sulphate input from the atmosphere and the important role of wetlands for the global sulphur cycle. In May 1989 a workshop of the SCOPE/UNEP carbon unit was held in Istanbul, Turkey, to discuss, inter alia, the interactions of biogeochemical cycles in aquatic ecosystems and the tectonic development of sedimentary basins in the Black Sea region.

188. The proceedings of the 1988 workshop on phosphorus cycles in terrestrial and aquatic ecosystems were published in 1989. In this volume, numerous environmental problems related to phosphorus are addressed, e.g. eutrophication of lakes, rivers and coastal areas through fertilizer run-off; phosphorus-containing detergents in rivers; phosphate in sewage; and sewage treatment. In May 1989 a symposium entitled "Phosphorus requirements for sustainable agriculture in Asia and Oceania" was held in the Philippines, sponsored by UNEP, the International Rice Research Institute, the World Phosphate Institute, the American Phosphate Foundation and other donors. It focused on the role of phosphorus in tropical soils, phosphorus requirements of tropical crops, phosphorus deposits and possibilities of phosphorus recycling.

189. In co-operation with SCOPE and the Czechoslovak State Committee for Technical and Scientific Development a new project on the biogeochemistry of small catchments was launched, which will bring together researchers in the fields of biology, soil science, chemistry and the atmospheric sciences. The Scientific Advisory Committee of this project held its first meeting in October 1989 in Czechoslovakia, reviewing the data on the turnover of elements, organic matter, gases and water in small catchment areas.

## DESERTIFICATION CONTROL (Budget line 24)

190. The main obstacles to the implementation of the Plan of Action to Combat Desertification (PACD) have remained: the persistent low priority accorded to anti-desertification projects; and the general inadequacy of resources allocated directly to such projects; the dearth of economically and socially acceptable approaches to address land degradation projects at the grassroots level. Further, lack of knowledge about the real extent and site-specific causes of desertification often results in little public support for control measures, and areas of declining productivity tend to receive lower priority for investment and development. However, at the initiative of Governments the emergence of intergovernmental structures is beginning to show great potential in mobilizing resources for action to address the regional and transnational programmes for desertification control.

191. In Africa, the continent most affected by desertification and drought, a questionnaire, circulated by the United Nations Sudano-Sahelian office revealed the main factors that Governments and international organizations considered to be instrumental in hindering efforts to combat desertification. Responses from 24 Governments and 22 concerned donor countries and international organizations showed that almost all responding Governments (96 per cent) singled out lack of financial resources as the most severe limitation, and the international organizations concerned agreed to a large extent (40 per cent). In addition, a lack of energy for household use, physical infrastructure, scientific and technical capabilities, and policy, as well as inadequate planning and co-ordination, coupled with the low priority attached to desertification were among the factors that Governments and international organizations identified as a severe hindrance to the combating of desertification. Most of these factors are internal in origin. In several respects, this confirms the view expressed by UNEP that the impact of programmes aimed at desertification control is severely reduced, owing to the lack of a clearly defined framework for desertification control that is effectively integrated into national development plans. National institutions to deal with desertification remain weak, because the sectoral nature of Government structures makes co-ordination difficult.

192. Against the above background, during 1989 UNEP focused its effort on engaging donors and the Governments of countries affected by desertification in a dialogue to search for effective institutional mechanisms to integrate desertification control programmes into overall national development plans and priorities. In view of the importance of appropriate technologies for desertification control, UNEP also initiated action for the development and assessment of simple technologies for application in regions prone to desertification. In addition, assistance was provided to selected countries in the identification and development of methodologies to assess and map the status of desertification - its extent, rate and risk - as knowledge of all these parameters is essential for effective planning for desertification control. Other activities were continued or reinforced in regional networking, sub-regional projects and the development of a global data base.

193. During the period under review, UNEP worked with selected Governments that have national plans for desertification control or that are in the process of formulating them, with a view to assisting them in integrating these plans into national development plans and having them financed within the framework of resources allocated to economic development.

194. In this regard, during the 1988-1989 biennium UNEP held consultations with the Governments of Argentina, Mali, Mauritania, the Sudan, Syrian Arab Republic and Yemen Arab Republic, all of which have national plans of desertification control in various stages of development. The Government of Mauritania has been preparing a multi-sectoral master plan to combat desertification, with the assistance of UNSO (on behalf of UNEP), in close collaboration with FAO, UNDP, the World Bank and bilateral donors. The Government of Mali, with the assistance of UNEP, developed and transformed the national plan of action to combat desertification (NPACD) into a national programme to combat desertification as part of the national economic development plan, also incorporating the country's Tropical Forest Action Plan. Further, the Government of Mali convened round-table meetings for donors in December 1988 and April 1989 for the presentation of project proposals under the plan, including the creation of a national GIS database. The national plan of action to combat desertification in the Yemen Arab Republic, finalized in 1988, was supplemented by further

consultancy assistance provided by UNEP in 1989, under which the Government prepared project profiles and fact sheets for priority projects suggested in its national plan of action.

195. The Governing Council has recommended that national plans of action and the process of their implementation should be grassroots-oriented for easier integration into national economic systems. During 1988-1989 a number of African countries assisted in formulating pilot projects for the rehabilitation of villages and the sustainable development of stock-raising zones in semi-arid areas within the framework of the Cairo Programme for African Co-operation on the Environment. These projects are intended to foster grassroots participation, self-help and self-reliance. As of 31 August 1989, pilot village projects for sustainable food, fodder and fuel production, involving popular participation and focusing on women in development, had obtained funding from AGFUND, UNDP, the World Food Programme, the Canadian International Development Agency and UNEP and were under implementation in Djibouti, Egypt, Ghana, Uganda, Zaire and Zimbabwe.

196. In accordance with Governing Council decision 12/10, UNEP, together with its partners in the Inter-Agency Working Group on Desertification (IAWGD), in 1989 continued to support and co-ordinate a number of regional networks of institutions for training and research programmes dealing with sand dune stabilization and afforestation, and continued to provide support to NGOs in Africa, Asia and Latin America. A regional network of research and training centres on desertification control in Asia and the Pacific (DESCONAP), established by ESCAP in 1988 with funding support from UNDP and UNEP, has as its main objective the strengthening of research and training institutions in the region, in order to combat desertification by developing appropriate expertise at the policy and programme management levels, identifying investment projects, fostering technical co-operation among the countries of the region, and an exchange of experiences in training, research and information. So far, 16 Governments and four international organizations have joined the network and have designated official focal points, which are responsible for promoting research and training through more than 50 research/training institutions and government departments. The emphasis is on desertification mapping, promotion of training in and research into desertification control, technical co-operation among network members and involvement of non-governmental organizations (NGOs) and women's groups in the project.

197. A Programming Consultative Group meeting in September 1989 accepted the proposal to establish a DESCONAP Programme Office in the Islamic Republic of Iran to co-ordinate activities that are particularly related to the mapping of arid regions of Afghanistan, India, Iran and Pakistan. The Environmental Training Network for Latin America and the Caribbean, established with the support of the Governments of the region and with funding from UNEP, also undertakes training in desertification control.

198. In 1989, UNEP continued to give preparatory assistance to NGOs in Asia that administer national-level forums, with a view to setting up a regional network of NGOs in Asia and the Pacific. About seven such national forums were identified during 1989 and negotiations were initiated to bring them together to form a regional network of representatives which will disseminate information to the people on environmental and natural resource management practices to control soil degradation and desertification and for afforestation. After contact with NGOs in a number of countries in Latin America and the Caribbean, UNEP prepared guidelines and action proposals for a network of regional NGOs and research institutions for desertification control a meeting to consider setting up the network will take place towards the end of 1990.

199. During 1988-1989 UNEP provided assistance to the Southern African Development Co-ordination Conference (SADCC) secretariat in training and identifying a regional co-operative programme for desertification control among the SADCC member States. UNEP collaborated with SADCC in developing a draft regional plan of action for intergrated land use planning in the Kalahari/Namib affected areas. This draft has been approved by the Committee of Ministers of Agriculture and Natural Resources of SADCC and is to be finalized into a full-fledged project document for presentation to donors for implementation in the 1990-1991 biennium. The AMCEN Deserts and Arid Lands Committee, with support provided by UNEP to the designated focal points of Gambia, Guinea and Mali, prepared a sub-regional programme for ecological rehabilitation of the South Saharan Zone and the Gum Belt. Other sub-regional programme proposals prepared under within the framework of AMCEN include the action programme for the control of savanization in Central Africa.

200. During the period under review, UNEP, in co-operation with UNEP/COM, the Arab Centre for the Study of Arid Zones and Dry Areas (ACSAD), the Institute of Desert Research Academia Sinica (China) and ROSTA-Unesco organized eight training courses and seminars in which 166 participants received instruction in combating desertification. Most of the training was organized for developing countries on a regional basis and, in keeping with UNEP policy, the training activities were conducted to the greatest extent possible within the regions themselves (China, Mali and Senegal). The other members of IAWGD, namely ECA, ESCWA, ACSAD, FAO, Unesco, WMO, UNSO, SADCC, the World Bank and the International Institute for Environment and Development, reported training a total of 1,169 individuals in different subjects related to desertification control.

201. Similarly, the training programmes run by IAWGD members for technicians and individuals from villages and organizations at the grassroot level in subjects related to development and management of drylands have achieved significant results, accounting for over 6,450 trainees in the period 1985-1989.

202. There is a need for an adequate, simple and cost-effective method of measuring the desertification process. To prepare for the second general assessment of progress in the implementation of the PACD in 1992, called for by the Governing Council in its decision 12/10, UNEP co-operated with the Governments of France, Kenya, Mali, and the USSR to launch pilot projects to develop appropriate methods for the assessment of desertification.

203. In Kenya a pilot study to refine the FAO/UNEP provisional methodology for assessment and mapping of desertification was undertaken during 1988-1989 and resulted in the introduction of a refined computer model for assessment of desertification at the local levels within the country. UNEP, together with the Government of Kenya, evaluated the outcome of the pilot study and both parties agreed that the results provide a good basis for the application of the refined model of assessment and mapping of desertification at the national level during the next biennium.

204. Under a UNRFP-funded pilot study on assessment of the status and rate of desertification in Mali using the modified FAO/UNEP methodology for assessment of desertification in the USSR, maps have been compiled from field data collected from an area covering 29,000 square kilometres in the Sudano-Sahel and

Sahelian zones of the country. The final report on the project is expected to be available in the first quarter of 1990 for use in planned training courses for Mali.

205. A pilot project, funded by UNEP and the Government of France, was initiated in 1988 to develop a methodology for assessment of desertification in the south Saharan arid, semi-arid and sub-humid ecozones. It is based on comparative interpretation of sets of aerial photographs available from the 1950s, and new sets of photographs taken in 1987 and 1989. The photo interpretation was supported by ground verification missions, and the use of 'Spot' satellite imagery allowed cartographic adjustments of the aerial photographs. A scientific report on the results obtained from the analysis of three test areas in west Mali demonstrated that 18 land use patterns could be distinguished and respective changes over the last 30 years quantified. It was, for example, possible to state that in the test areas of Mourdiah, where about 70,000 ha were surveyed, the surface of bare ground increased from 14 to approximately 5,000 ha over the last 30 years. Similarly, rather dense tree savanna coverage decreased from 51,000 ha to 36,800 ha. This project is to be extended with proposed additional funds, which will bring the total cost to \$1,010,000, covered equally by France and UNEP. The objective of this extension is to test the possibility of using high-resolution satellite imagery instead of a second set of expensive aerial photographs for the quantification of ecological changes in the Sahel, which would allow an assessment of desertification. To serve the same objective, statistical methods using the initial approach of comparative photo-interpretation are included in the research programme. The actual work is mainly carried out by scientists of the Institute National Géographique - France International (IGN-FI). The final output of this project is expected to provide a reliable and cost effective method for qualitative and quantitative assessment of desertification throughout the Sahelian zone of Africa and similar ecozones elsewhere.

206. During the biennium 1988-1989, the UNEP Desertification Information System (DESI) was established, in accordance with Governing Council decision 12/10, to deal with the identification, collection, classification and dissemination of all types of information related to drylands development and desertification processes. The established DESI databases, which have been computerized, are shown in Table 2 below.

Table 2  
Current Status of Desis Databases

| Main Databases | Number of Entries | Description                                                                                         |
|----------------|-------------------|-----------------------------------------------------------------------------------------------------|
| BIWIND         | 6,300             | Worldwide documentation on wind erosion control (completed)                                         |
| ACWIND         | 183               | Activities on techniques of erosion and wind effect (completed)                                     |
| DELI           | 680               | DC/PAC-Desertification library bibliographic references (ongoing)                                   |
| DIOR           | 528               | Directory of organizations dealing with desertification control and dryland development (completed) |
| REWIND         | 355               | Network of researchers and institutions dealing with wind erosion (completed)                       |
| KEYS           | 308               | DESIIS thesaurus (completed)                                                                        |
| DEPRO          | 73                | UNEP desertification control projects (completed)                                                   |
| PROCOM         | 326               | United Nations compendium on dryland development and desertification control projects (completed)   |

The directory of organizations (DIOR) and the United Nations compendium of projects (PROCOM) have been published and distributed to United Nations organizations, international training and research institutions, libraries, government environmental agencies, universities, development aid agencies

and intergovernmental organizations. These directories are scheduled for updating and distribution as publications every two years. The wind erosion bibliographic referral system (ACWIND) has also been published for distribution. The compilation and computerization of the arid lands bibliography data base (DELI), developed jointly by UNEP and the Office of Arid Land Studies of the University of Arizona during 1989, has been completed; it will be published for distribution to universities, libraries, international training and research institutions and environmental organizations in 1991.

207. The IAWGD, at its sixteenth regular meeting in September 1989, adopted the assessment of desertification as a topic for its thematic joint programming activity to support the second general assessment of progress in implementation of the PACD, planned for 1992. The IAWGD also discussed the issue of inter-agency co-operation at country and sub-regional levels, in light of the request made by the Governing Council in its decision 15/23 that IAWGD should undertake joint action to mobilize technical and financial resources to assist activities to develop and implement national programmes to combat desertification. At the invitation of SADCC, IAWGD agreed to pursue inter-agency action as its first operation to mobilize technical and financial resources to assist related member countries of SADCC to develop and implement national programmes to combat desertification. Their experience will later be extended to other countries in Asia, Latin America and the Caribbean. UNEP has taken action to have the project outline approved by the relevant SADCC structures, in preparation for its implementation in the next biennium. IAWGD also reviewed its procedure for reporting on members' activities in implementing PACD and agreed that an analytical appraisal of reporting should be followed, in order to identify successful projects and constraints and gaps as a basis for promoting joint activities.

#### ENVIRONMENTAL HEALTH (INCLUDING AGRICULTURAL CHEMICALS) (Budget line 25)

208. Efforts to improve human and environmental health continued in 1989. The International Programme on Chemical Safety (IPCS), which is supported by ILO, UNEP and WHO, made further assessments of the risks to human health and the national capabilities in the field of chemical safety. IPCS also collaborated with FAO in the evaluation of the toxicological risks of chemicals in food, including additives

and contaminants, pesticide and veterinary drug residues. The resulting evaluations provide a scientific basis on which Governments may base their chemical safety regulations. At the same time, there was continued great concern over the biological agents which trouble developing countries, as they cause some of the most serious tropical diseases. Malaria incidence remained in the order of 100 million cases per year; 200 million people are still estimated to be infected with the schistosomiasis parasite, and animal trypanosomiasis and human sleeping sickness remained major scourges on the African continent.

209. By 1989, 29 countries and 66 institutions were supporting the IPCS. UNEP's IRPTC continued its close co-operation with IPCS in the area of collection, validation, storage and dissemination of data on chemicals (see paragraphs 56-76. IPCS maintained close working relations with the International Agency for Research on Cancer (IARC) as regards the evaluation of carcinogenic risks posed by chemicals.

210. During the biennium 1988-1989, 24 further documents on potentially toxic chemicals were published in the Environmental Health Criteria (EHC) series, bringing to 100 the number of chemicals thus far evaluated. These studies are designed for scientific experts responsible for the evaluation of the risks posed by chemicals to human health and the environment, enabling relevant authorities to establish policies for their safe use. Thirty-two Health and Safety Guides, summarizing the toxicity information in non-technical language, and providing practical advice on matters such as safe storage, handling and disposal of the chemical, accident prevention and health protection measures, first aid and medical treatment in cases of exposure leading to acute effects and clean-up procedures have been published, and a further 17 are in the pipeline. Two hundred and seventy-five International Chemical Safety Cards were prepared in 1989: the cards give identity data and health and safety information on chemicals for advice to workers and employers. IPCS also evaluated the toxicity of 35 food additives, 9 food contaminants, 11 veterinary drugs which leave residues in human food, and 33 pesticides widely used in agriculture.

211. With developing countries in mind, a handbook on poisonings was prepared for use by non-specialist medical and paramedical professions, such as primary health care workers, as well as a manual on analytical toxicology for use in

developing country hospital laboratories. Work on a methodology for health risk assessment focused on methods of assessing the nephrotoxicity associated with exposure to chemicals and assessing pesticide residues in food. Collaborative studies were carried out to evaluate the utility of plant essays for the detection of environmental mutagens and carcinogens and of short-term tests to assess the toxicity of complex environmental mixtures. Work has also been carried out on the validation of test methods to detect the effects of toxic chemicals on the nervous and immune systems. During the period under review, high priority was given to manpower development, which resulted in the organization of 10 training courses on chemical safety and in the development of training models and audiovisual material.

212. Mycotoxin contaminants of food and feeds is a major problem affecting human health and reducing the value of export commodities in several developing countries. Work to improve food safety continued in the United Republic of Tanzania by monitoring and preventing the levels of mycotoxins, and similar activities are planned in Asia and Latin America during the next biennium. Preparations for several training courses for health officers from Palestinian refugee camps were well under way. A project to improve food safety and drinking water quality in Bahrain was successfully implemented, as was another on environmental control of water-borne diseases in Egypt.

213. Estimating the relative genetic risks from exposure to chemicals and ionizing radiation in man and non-human biota is a major exercise. Together with the International Commission for Protection Against Mutagens and Carcinogens (ICPEMC), UNEP held a preliminary meeting to study and address the issue was held in Leningrad in December 1989. Further work is expected to be initiated during the next biennium.

214. A preliminary report was published, assessing the scope and severity of the impact on public health of the use of pesticides in agriculture, with particular reference to the general population in developing countries. Estimates indicate that about 3 million cases of acute pesticide poisoning occur each year world-wide, 2 million of which are suicide attempts. In addition, there may be about 700,000 cases of specific chronic effects and about 40,000 cases of unspecific chronic effects. Due to lack of epidemiological data, these estimates are very uncertain. There is a need for further efforts to

reduce the risk of pesticide poisoning, particularly in the light of the predicted rapid increase in pesticide use in developing countries.

215. A joint workshop on exchange of information on crop protection was held between the Commonwealth Agricultural Bureau of the United Kingdom, UNEP and FAO at Wallingford, United Kingdom, in April 1989. The workshop was attended by 89 scientists from 34 countries, FAO, UNEP and the Commonwealth Agricultural Bureau. A number of recommendations were made and are being followed up.

216. A joint UNEP, FAO, WHO, USSR seminar was held in Moscow in April 1989, under the auspices of the FAO/UNEP/WHO Panel of Experts on Environmental Management for Vector Control (PEEM). The two-day seminar exchanged information on PEEM and USSR involvement in environmental management for vector control and agreed on a number of areas for future PEEM/USSR collaboration. These include a workshop on forecasting and monitoring methods applicable to health-risk assessment and health surveillance in water resource development projects, to be held in Alma-Ata in 1990. The ninth session of PEEM, which was held in Geneva in September 1989, discussed inter alia the policies and programmes of Governments, bilateral and multilateral agencies and development banks for environmental management in the context of natural resources, agriculture and health development. The major aim of this session was to start involving bilateral and multilateral donor agencies and development banks in the work of PEEM, particularly in its field orientation.

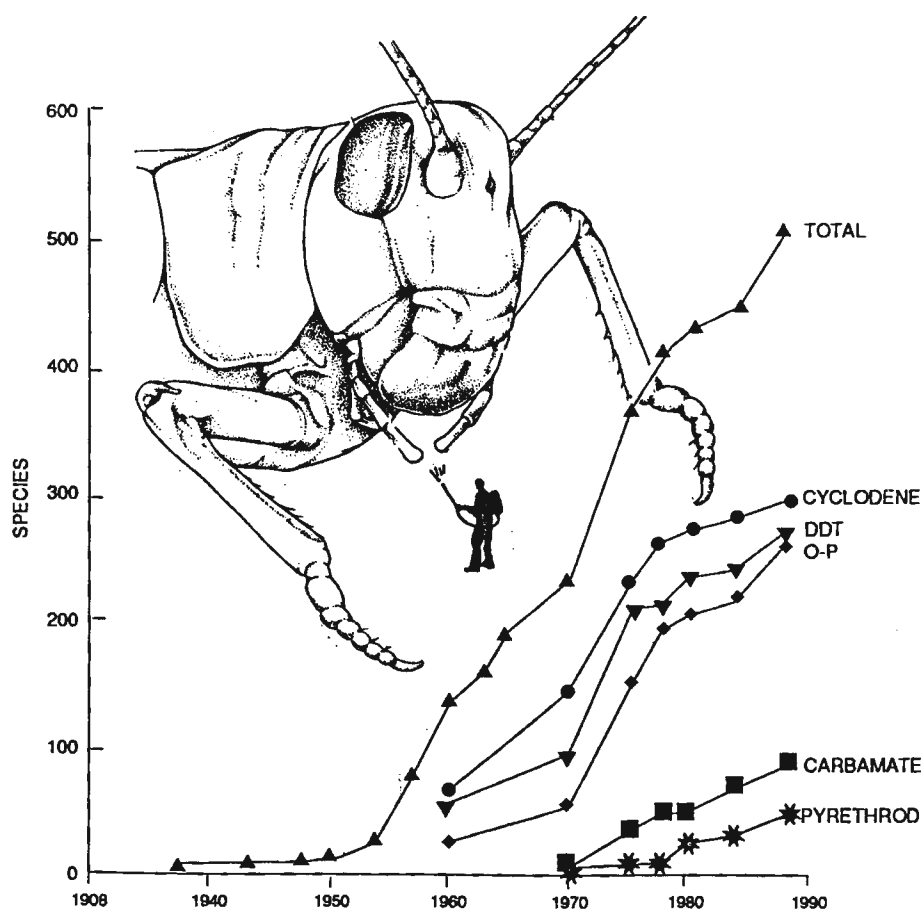
217. An FAO/UNEP technical assistance mission visited India, the Philippines and Thailand in June 1989 to assess the respective needs of the Indian National Institute of Nutrition, Hyderabad, the National Post-Harvest Institute for Research and Extension, Nuova Ecija, Philippines and the National Laboratory for Plant Protection and Microbiology, Bangkok, with a view to establishing a network on mycotoxin control in Asia involving the three institutions. The team was joined in Bangkok by a representative of the USSR Centre for International Projects and by representatives of the National Laboratory for Plant Protection. A meeting to draw up a project and apportion responsibilities between all the parties concerned was held in Chiang Mai in June 1989.

218. Together with the Government of Trinidad and Tobago and FAO, in August 1989 UNEP held a training course in Port of Spain on safe and effective use of pesticides. The workshop, which was also attended by scientists from other English-speaking countries of the Caribbean, was supported by industry and dealt with the theoretical and practical aspects of safe and effective use of pesticides.

219. The fourteenth session of the FAO/UNEP Panel of Experts on Integrated Pest Control was held in Rome in October 1989. Among the many recommendations was that both PEEM and the FAO/UNEP Panel should work together in implementing the PEEM programme on research and training in the field of integrated vector-borne disease control in riceland agro-ecosystems, which PEEM formulated in 1987. At the meeting, it was also reported that a total of 504 insect species had developed resistance to one or more insecticides by the end of 1988 (see Figure 8).

Figure 8

**Chronological increase in the number of insect and mite species resistant to at least one type of insecticide (total), and numbers of species resistant to each of the 5 principal classes of insecticide.**



220. During a meeting held in November 1989 in Bangkok, to evaluate the project to organize training workshops for leaders of women's groups in Thailand in the safe handling and use of pesticides it became clear that the initial goal of training 150 leaders of women's groups had been surpassed and a total of 1,500 people, mainly women, from five Thai provinces had been trained during 1989. These had in turn trained another 10,267 people within six months of the series of workshops. In one instance, the multiplier effect was 300:1. The meeting also considered conducting workshops in other South-east Asian countries using the experience from Thailand.

221. The African Association of Insect Scientists (AAIS) held a symposium, supported by UNEP on "Insect Pests and Sustainable Food Production" in Lusaka, Zambia in December 1989.

222. The 1989 General Assembly of the International Group of National Associations of Manufacturers of Agrochemicals, (GIFAP), held a meeting of its Governing Council at the UNEP office, Nairobi in December 1989.

223. The Regional Office for West Asia, in co-operation with UNEP/IEO, convened a workshop in December 1989 on Hazardous Waste Management Policies and Control Options. This regional workshop was held in Bahrain and attended by representatives from Egypt, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates and Yemen Arab Republic. Representatives from industries and universities in the region and the Gulf Co-operation Council (GCC) also participated. The workshop discussed waste and environmental assessments, technology for hazardous waste treatment and disposal, legal and administrative considerations and evolution of hazardous waste management strategies.

PEACE, SECURITY AND THE ENVIRONMENT  
(Budget line 81)

224. In 1989 the concept of environmental security gained further acceptance, as was evidenced by the fact that it was very widely reviewed in many international forums, including the Governing Council of UNEP and the General Assembly. The concept deals with the concern of common security as it relates to environmental degradation as a cause and a consequence of conflict. Environmental degradation, especially in the Third World, often exacerbates conflicts originating from other causes. Hence, co-operation for environmental protection is

important not only in itself: properly organized, it could be a way of mollifying hostilities, building confidence and facilitating conflict resolution.

225. During 1989 a conference was held in Moscow, co-sponsored by the USSR Academy of Sciences, the International Peace Research Institute (PRIO) in Oslo and the Ecoforum for Peace in Sofia, Bulgaria. Following this conference, a brochure was published entitled Environmental Security - a report contributing to the concept of comprehensive international security. As a result of a select symposium that had been convened by PRIO and UNEP in Tallinn, USSR, in 1988 a book was published entitled Comprehensive Security for the Baltic: An Environmental Approach, which explores the extent to which regional co-operation on environmental protection and the utilization of natural resources serves as a confidence-building measure to foster comprehensive international security, using the case of the Baltic as a particularly important ecogeographical region for international security. The methodology and approach developed in the book will be applied to an exploration of regional co-operation in environmental protection in two other regions - the Horn of Africa and Central America.

#### TECHNOLOGY AND ENVIRONMENT (Budget line 27)

##### Energy (Budget subline 271)

226. Over the last two years a consensus has gradually emerged in the world scientific community that the damage being done to the environment by current patterns of energy production and use is the most urgent issue facing decision makers dealing with energy today. On a global level, the accumulation of greenhouse gases is threatening to cause significant changes to the world's climate. Roughly 50 per cent of the present greenhouse gas emissions may be attributed to the energy sector, primarily to the emission of CO<sub>2</sub> produced by the combustion of fossil fuels. Other important energy-environment issues are the unsustainable use of biomass resources, mainly in developing countries, the acidification of forests, lakes and soils - which is also related to fossil fuel use - and the safe handling and disposal of nuclear material.

227. In responding to these challenges, UNEP is pursuing a strategy based on three main components: (a) providing information on the environmental impacts of different energy systems; (b) assistance in incorporating environmental considerations into energy planning and policy-making; and (c) support for projects in the field that aim to provide a practical demonstration of environmentally sound energy development. The activities are aimed at different groups, such as energy professionals, policy makers and the public. Different forms of output will therefore be used, including technical reports and manuals, popular booklets, policy pamphlets and computer programmes.

228. Concerning the environmental impacts of energy systems, the major activity during 1988-1989 was a study on biomass fuels and the environment. The results will be published commercially early in 1990 as a technical report and as a popular booklet. In addition, UNEP is publishing the policy recommendation in a separate booklet, which will be distributed using the recently developed mailing list containing more than 1,500 addresses of relevant ministries, institutions and NGOs. In order to summarize and popularize the many studies UNEP has produced in this area in the past years, a popular book Energy, Environment, Pollution and Health has been prepared and will be printed and distributed by UNEP.

229. With the strong focus in UNEP on the problem of climate change and the above-mentioned contribution of the energy sector to the build up of greenhouse gases, activities in coming years will concentrate on promoting energy policy strategies that aim at reducing these emissions, especially CO<sub>2</sub>. As a first step, in 1989 UNEP developed a comprehensive computerized database on environmental impacts from different energy sources and systems, and prepared a link between this database and an existing energy planning system, known as LEAP (Long-range Energy Alternatives Planning). The database and the LEAP connection will be tested in Kenya in early 1990. On the basis of experience in a field trial, UNEP will promote the wider use of this system. Proposals are being prepared in order to assist some of the larger energy consumers among the developing countries in formulating more sustainable energy policies, taking into account their economic development potential.

230. The activity in the field of environmental management of low-grade fuels, which started out as a technical study and training course, has now led to the development of an operational manual for energy planners and policy makers.

231. The planned village pilot project in the Sudan - part of the activities under AMCEN - had to be abandoned owing to the political situation in the country. The network on renewable energy was continued, with the regional co-ordination unit in Senegal now being operational. Another pilot project was under preparation for Uganda and it is expected to start in mid-1990. An energy component has been developed as part of the project on the environmental management and protection of the Andean ecosystems in Cajamarca, Peru.

232. An additional pilot project is under preparation for integrated energy-environment planning on the Greek island of Rhodos. This is a joint activity with the Regional Activity Center of the Mediterranean Action Plan and will form part of the integrated management of coastal areas.

Industry and transportation (including working environment)  
(Budget subline 272)

233. At the 1984 World Industry Conference on Environmental Management, it was recognized that the responsibility for industrial environmental management was to be shared between several different sectors, with many organizations taking separate initiatives. The need to catalyse and co-ordinate such shared action is the basis of UNEP's approach.

234. To this end, UNEP's Industry and Environment Office (IEO) concentrates on formulating and promoting appropriate policies and strategies. More specifically, it seeks to:

(a) Define and encourage the incorporation of environmental criteria into industrial development;

(b) Formulate and facilitate the implementation of principles and procedures to protect the environment;

(c) Promote the use of safe, low- and non-waste technologies (LNWT);

(d) Stimulate the exchange of information and experience on environmentally sound forms of industrial development throughout the world.

235. UNEP, through its IEO, seeks to provide access to practical information and to develop co-operative on-site action and information exchange, backed up by regular follow-up and assessment. It encourages all sectors of industry to adopt and implement environmentally sound policies at all levels in an enterprise.

236. Many of UNEP's initiatives in industrial environmental management involve co-operation with international governmental organizations (in particular WHO, UNIDO, World Bank, IAEA, ILO, UNDP, UNDRO, the World Tourism Organization, ECE, OECD, the Commission of the European Community) and non-governmental organizations (in particular the International Chamber of Commerce, the International Environment Bureau, the World Federation of Engineering Organizations, the International Petroleum Industry Environmental Conservation Association (IPIECA), the Environmental Liaison Centre, the International Solid Waste and Public Cleansing Association, the International Organization of Consumers Union, and the Entente Européenne de l'Environnement). Considerate support from bilateral agencies has also been obtained for training workshop, expert consultants, and technical assistance projects.

237. During 1989, UNIDO, WHO and IAEA joined with UNEP on the inter-agency risk project. The cleaner production network involves co-operation with UNIDO and the Commission of the European Community, and is supported by many countries.

238. Work with the International Chamber of Commerce and sectoral industrial associations has helped to enhance the extent to which industry itself develops and implements environmental policies and guidelines.

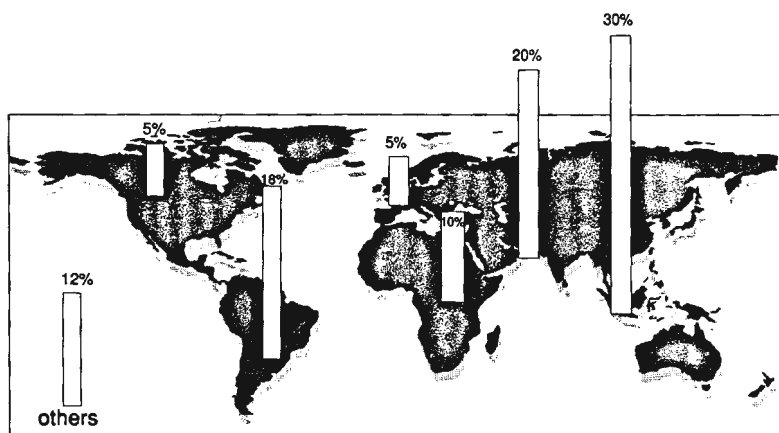
239. The need to see environmental quality and industrial development as being interdependent is now becoming increasingly accepted. While environmental quality is an important factor in national development, the practical means of achieving both goals simultaneously need to be better understood. An important function for UNEP/IEO is thus to publicize, promote, encourage and stimulate sustainable industrial development. International agreements and conventions can help to provide a framework for such actions,

but final implementation takes effect at the national level through its application of policy and regulatory instruments, and the building of the necessary supporting infrastructure. UNEP has therefore continued to play a role at both levels - providing framework agreements and helping countries to implement them.

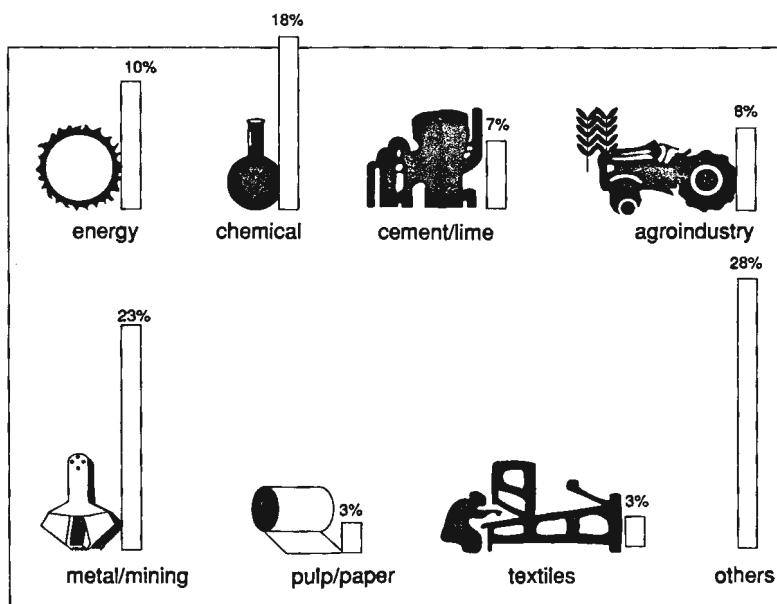
240. UNEP/IEO assistance to national authorities concerned with industrial environmental management has taken four broad directions, in line with the priority functions defined by the Governing Council: publication of technical guidelines and reviews on industry sectors or environmental issues; information transfer in a variety of ways with industry, government focal points, NGOs and the scientific communities; technical co-operation on specific subjects or problems; and training initiatives to enhance both government and private sector skills.

241. Technical guides and reviews contain the specific information needed by both industry and public sector managers to plan for and operate industrial processes in a safe manner with a minimum of waste. Technical guides are developed for environmentally important industry sectors, and for issues and management tools that require specialized knowledge. In 1989, guides on metal-finishing operations and on iron and steel production were published, while guides on storage of hazardous material and environmental auditing were in an advanced state. Other sector documents on mining, textiles, oil exploration, tanning and wood-preserving have been commended. A guide on hazardous waste disposal was published in 1989, jointly with the World Bank and WHO.

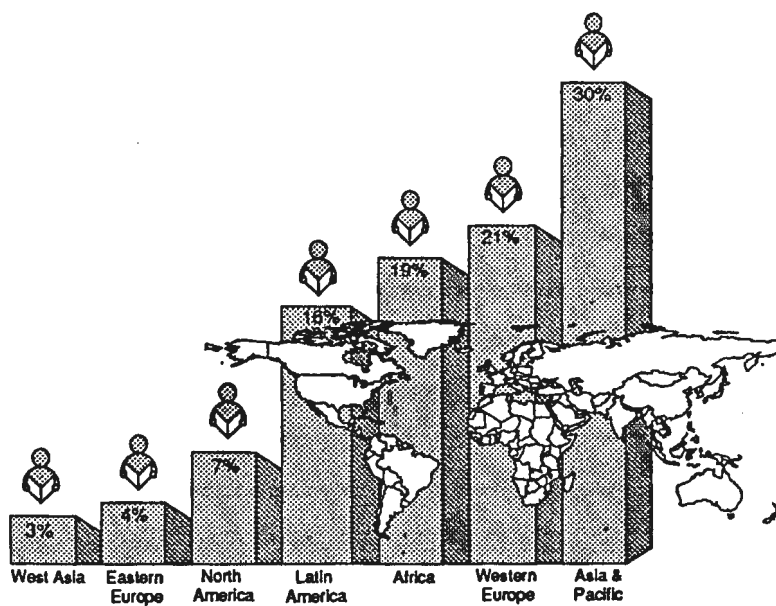
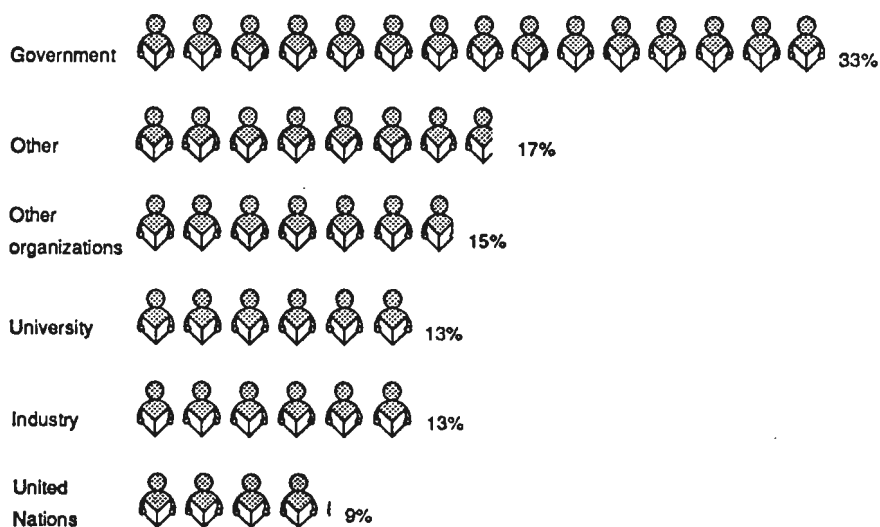
242. The transfer of technical information by the Industry and Environment Office is complementary to that carried out by INFOTERRA and IRPTC. In 1988-1989, a query-response service provided information in answer to more than 500 requests from all parts of the world (see Figure 9). Some of the necessary information was provided by industry organizations, some came from internal or commercial databases. A directory of information sources was jointly prepared and published by IEO and INFOTERRA.

**Figure 9****Distribution of technical queries by region and sector**

N. America Latin America Europe Africa W. Asia Asia/Pacific



243. The quarterly review Industry and Environment continues to reach over 5,000 subscribers in 160 countries (see figure 10). Many of the subscribers are libraries, thereby greatly amplifying the actual readership beyond. The topics covered in 1989 were technological accidents, environmental auditing, waste minimization and siting of industry.

**Figure 10****Distribution of "Industry and Environment" by sector and region**

244. In line with Governing Council decision 15/37 on the promotion of the transfer of environmental protection technology, a network for "cleaner production" was started, which involved the following activities:

- (a) Convening of experts advisory group meetings;
- (b) Preparation of a directory of experts, databases, and activities undertaken by various countries to promote cleaner technologies;
- (c) Creation, with the support of the United States, of the International Cleaner Production Information Clearinghouse (ICPIC);
- (d) Creation of specific working groups in the sectors of tannery, textile, metal-finishing, solvents, to prepare case studies to be inputs in the database.

245. Through technical co-operation activities, UNEP continues to assist countries with specific problems or on specific issues. UNEP/IEO may provide direct expertise to developing countries, via a consultant, or may arrange for study tours or familiarization programmes in industrialized countries. The following developing countries benefited from such activities during 1989: Abu Dhabi (United Arab Emirates), Ghana, India, Mexico, Morocco, Tunisia. The technical assistance is financially supported by developed country Governments and industries, who make their expertise available at no cost.

246. UNEP/IEO - with the active support of industry and governments - launched a major initiative, APELL (Awareness and Preparedness for Emergencies at Local Level), designed to reduce the risk and severity of technological accidents. It is aimed specifically at alerting local communities, particularly in developing countries, to the dangers of technological accidents. It also provides them with a framework from which to develop emergency plans at the local level to cope with such accidents.

247. Further to the high level conference hosted by the Government of France in December 1988, 4500 copies of the APELL Handbook were disseminated in English; the document has also been distributed in French and Spanish. An APELL Newsletter has also been produced, informing on the status of the various APELL activities in the world. The programme is implemented

through training activities. An APELL workshop was organized in Bahrain, and IEO gave support and assistance to training workshops held by other international organizations. The workshops were complemented by the ongoing collection and preparation of resource materials that can be used on their own or in conjunction with future programmes. A network of experts and emergency response centers is under preparation.

248. Specific training activities were pursued to complement actions on a number of other issues. Assistance to countries in the implementation of the Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Wastes management and the March 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was provided through training workshops for over 90 persons held in Kuala Lumpur and Mexico in 1988, and in Bangkok and Bahrain in 1989. Preparations for further such workshops advanced in 1990.

249. During 1989, UNEP's liaison with industry bodies showed increasingly positive results. A number of industry/trade associations and industries discussed environmental codes of practice and invited UNEP/IEO to contribute to and participate in policy formulating and awareness raising activities. Seminars on "Environmental Auditing" and on "Industry Environmental Management Policies" were held, and proceedings of these seminars will be widely disseminated to promote the use of environmental management tools. Finally, UNEP/IEO has been promoting the integration of environmental criteria in business schools.

250. Increasing attention was given to specialized sectors such as transport and tourism, in co-operation with other bodies concerned. Working environment issues have been incorporated into technical guides, information exchange and training activities.

#### Human Settlements (Budget subline 273)

251. One visible aspect of urban environmental deterioration is the garbage glut that is now inundating cities throughout the world. This is a phenomenon affecting cities in both industrialized and developing countries. Urban dwellers in Europe, America, Asia, Latin America and Africa throw out staggering amounts of refuse (e.g. the United States, 3.5 pounds per person per day; Japan, 1.9 pounds per person per

day; Federal Republic of Germany, 2.3 pounds per person per day; Egypt, 0.7 pounds per person per day). As cities run out of land-fill sites to dispose of the refuse and as disposal fees soar, municipal authorities are forced to transport large amounts of garbage beyond city limits - even beyond national boundaries, thus giving rise to additional political problems.

252. A fouled landscape is not the only indicator of environmental deterioration in urban areas. As urban population in developing countries grows at rates of more than 5 per cent, as the number of vehicles and the number of trips per person per day increase with new life styles and economic activities, and as the continuing expansion of urban areas over forest zones and green areas is accelerating by between 4 to 5 per cent per annum, pollution increases with emissions, reducing air quality in urban areas, causing decreased visibility and threatening public health.

253. Against this background, UNEP and UNCHS continued to address environmental aspects of human settlements through the promotion of the environmental guidelines for planning of human settlements that were completed in 1988. Activities were initiated in 1989 to apply the guidelines in selected metropolitan areas.

254. In 1989, several other reports have been completed to supplement the environmental guidelines. These include:

- (a) Environmental aspects of urban storm drainage in developing countries;

- (b) Manual of leakage detection and prevention in municipal water supply systems;

- (c) The environmental management of the indoor environment;

- (d) The control of insects and rodents in urban areas;

- (e) The management of open and green space in urban areas of African cities.

#### Natural disasters (Budget subline 274)

255. Following the adoption by the Governing Council of decision 15/10 on a United Nations Centre for Urgent Environmental Assistance, the Executive Director invited Governments, as well as United Nations bodies and specialized agencies, to express their views regarding the need for a United Nations Centre. Thirty-three Governments and twenty United Nations bodies and specialized agencies expressed their views in 1989. The Executive Director intends to complete analysis of these views and to prepare a report for submission to the Governing Council at its sixteenth regular session in 1990.

256. In keeping with decision 11/7 of the Governing Council, the Executive Director continued to exercise restraint in allocating funds to activities with respect to natural disasters. As a consequence, no other new activities were undertaken in this area in 1989.

### SUPPORT

#### Support Measures (Budget line 31)

##### Environmental education and training (Budget subline 311)

257. Anything to do with the future of mankind must, by definition, address itself to those who will be living that future. Implicit in the task of laying the basis for sustainable development locally, nationally and world-wide is the education and training of children and youth of today to acquire the right attitudes, the necessary knowledge and the appropriate skills.

258. Consequently, each of UNEP's actions must include an educational, a training and an information component. During 1989 UNEP retooled in order to meet, in 1990 and 1991, the educational requirements of the approved areas of concentration of UNEP. This was achieved in part through the annual Unesco-UNEP inter-secretariat meeting on environmental education, held in 1989 in Paris. Similarly, Unesco stressed the development of environmental education as part of basic education. Starting as of 1989, UNEP began to try to achieve environmental literacy for all.

## Environmental Education

259. The International Environmental Education Programme (IEEP) remains the only major worldwide programme for environmental education. Unesco and UNEP are responsible for it. Currently in its phase VI (1988-1989), IEEP has produced, printed and disseminated a global strategy for the 1990s (1990-1999) in seven languages, thereby providing member States and institutions with a framework and guidelines for the next decade and a basis for preparing their own national strategies for environmental education and training for the 1990s.

260. In 1989, four issues of the IEEP journal Connect were produced with 16,907 copies in six languages, making it easily one of UNEP's and Unesco's most widely disseminated publications. Each issue of this line communication deals with a special feature.

261. During 1989, IEEP resource material (28 green modules in the Environment Education series) continued to be adapted by national curriculum development centres and Ministries of Education to suit local needs and conditions. Such adaptations were initiated or completed in 1989 for Algeria, Chad, Kenya, Mozambique, Senegal and Sierra Leone.

262. During the period under review, a total of 11,603 copies of Environmental Education documents were distributed to educational institutions and professionals in all regions of the world. During the same period, 1,622 copies of reports of meetings, seminars and training activities were sent to participants and other interested parties.

263. During 1989, the second year of phase VI of IEEP, international, regional and national training courses, workshops and seminars on Environmental Education were organized for teachers, teacher trainers, administrators, professionals and other groups in 20 countries of the world (Argentina, Australia, Belgium, Benin, Brazil, Bulgaria, Cameroon, Chile (two), Colombia, Costa Rica (two), Dominican Republic, Ethiopia, India, Mali, Malta, Mexico, Paraguay, Philippines). These events provided direct training to 640 cadres and, through them, indirect training to thousands of others.

264. From such a variety of contacts, UNEP and Unesco have already formulated and finalized phase VII (1990-1991) of the programme to meet the specific needs of member States in the coming biennium.

#### Environmental training

265. In the area of environmental training, UNEP's policy and activities are designed to promote acceptance of the concept of sustainable development. The broad aim of this training is to enhance the ability of all countries, and particularly those in the developing world, to apply sound environmental management to tackle the environmental issues they face. In pursuing this aim, UNEP incorporates a training component into all its projects.

266. There are two basic forms of environmental training: general and specialized. General training aims to build awareness of the environment and develop individual or corporate capabilities to deal with environmental concerns. Specialized training seeks to perfect the problem-solving skills of professionals whose work directly or indirectly affects the environment, and to enable them to work on environmental issues specific to their profession. Descriptions of such training activities appear elsewhere in this chapter under the appropriate headings.

267. A third awareness-building and resource management workshop for cadres of Ministries of Planning, Environment and Education of five Portuguese-speaking States of Africa, as well as Equatorial Guinea was held in Lisbon, Portugal, in June 1989. The three-day workshop, similar to those conducted in 1987 and 1988 for key personnel from English-speaking and French-speaking Africa respectively, was aimed primarily at heightening the participants' awareness of the need to promote sustainable development and of the means to achieve this through rational environmental action.

268. Under a joint project, UNEP, UNIDO, the Government of the USSR and the Tampere University of Technology (Finland) organized a five-week training course on environmental management for industrial managers and engineers from the Region of Asia and the Pacific, from 11 October to 15 November 1989. The training course, which was attended by 26 specialists from 11 developing countries, was conducted for three weeks at the Leningrad Pulp and Paper Technological Institute (USSR) and

for two weeks at the Tampere University of Technology (Finland). The main aim of this training course was to develop a cadre of industrial managers and engineers in the Asia and Pacific region who will be better informed about the need to use clean technologies (i.e. low- and non-waste) in industry and who will be skilled in making use of such technologies.

269. Over the past twelve years UNEP, jointly with Unesco, has supported a 10-month post-graduate course in ecosystem management at the Technical University of Dresden in the German Democratic Republic. The present course (October 1989 - July 1990), which is the thirteenth in the series, has the new title of post-graduate course in environmental management, with a completely revised curriculum reflecting UNEP's areas of concentration as areas of specialization within the course. To date, about 180 participants from the developing regions of the world have benefited from the training course and been awarded post-graduate diplomas.

270. A vast number of queries and requests from individuals, institutions and Governments were answered regarding training opportunities, curricula and resource material for environmental training. In particular, UNEP helped several universities (e.g. Moi University in Kenya, and Mansoura University in Egypt) to set up undergraduate or master's courses in environmental science or studies.

#### Information and public affairs (Budget subline 312)

271. In 1988 and 1989, media and public interest in the environment surged to record highs - proof of the awareness that action must be taken to protect our planet against further despoliation.

272. Many events were held around the globe on 5 June 1989, World Environment Day. The principal ceremonies held in Brussels under the banner "Global Warming Global Warning" summarized the appeal for global action to cope with the greenhouse effect. In 1989, UNEP presented the "Global 500" awards to 114 individuals and organizations for outstanding achievements in protecting and improving the environment.

273. The media played a key role in passing on the environment message. Their extensive coverage of the various environmental issues helped the public to better understand the scope of the challenge and helped UNEP to fulfill its role as a catalyst

through the dissemination of information on crucial environmental issues. The exercise also enabled UNEP to win support from all segments of society for its "outreach" activities.

274. UNEP continued to strengthen its relations with non-governmental organizations and community groups, giving special attention to youth groups. Over 3,000 students participated in a global youth forum on environment, organized by UNEP in New York in May 1989. The UNEP Regional Youth Focal Points organized workshops in Asia/Pacific, Africa, and Latin America and the Caribbean regions. The Focal Point for Western Europe established an environmental video library to cater for youth organizations.

275. UNEP continued to strengthen collaboration with the Scout and Girl Guide movements. A UNEP/World Organization of the Scout Movement workshop in October 1989 developed a new environmental programme for Scouts worldwide. UNEP assisted the World Association of Girl Guides and Girl Scouts in producing environmental guidelines and training materials.

276. UNEP maintained fruitful links with the Environment Liaison Centre International (ELCI). ELCI materials such as Ecoforum magazine, which attracts support for UNEP, reached over 6,000 NGOs worldwide. The magazine African Journalist, issued by the Union of African Journalists with UNEP support, continued to stimulate coverage on the environment in 30 African countries and a similar project run by the Arab Office for Youth and Environment covered the Arab region. Through other UNEP-sponsored projects with Press Foundation of Asia, Inter-Press Service and All Africa Press Service, information on the environment was more broadly disseminated to the non-governmental communities.

277. The results of the first worldwide survey of attitudes on the environment was released by UNEP in 1989. The survey, conducted for UNEP by Louis Harris and Associates, measured public opinion and leadership attitudes in 16 nations on four continents and is by far the most comprehensive study ever of environmental attitudes. Entitled "Public and leadership attitudes to the environment in four continents" the poll was conducted in Argentina, China, Federal Republic of Germany, Hungary, India, Jamaica, Japan, Kenya, Mexico, Nigeria, Norway, Saudi Arabia, Senegal and Zimbabwe.

278. UNEP continued to publish a wide range of books, brochures, periodicals and other information materials. Of particular interest was A Coast in Common, introducing the Eastern African Action Plan, and Our Planet, a new quarterly that replaced UNEP News, which ceased publication at the end of 1988. Efforts were concentrated on joint publications requiring minimal funding, such as The Economics of Dryland Management, Action on the Environment: the role of the United Nations, published in association with the National Center for Atmospheric Research. The promotional booklet UNEP Profile appeared in Chinese and Japanese. The popular Environment Briefs continued to attract strong interest, and two new titles were added to the series, bringing the total to eight.

279. During the period under review, there was an increase in UNEP's audio-visual activities, with radio productions, travelling exhibits, television and film productions and an expanded video library. UNEP produced and distributed regionally one radio programme on remote sensing in monitoring the environment, and one of the state of the environment in Arab countries. Various interviews, speeches and messages were recorded in-house and made available to broadcasting stations. Recordings of voice-overs, background music and sound effects were produced for video spots now in production. A new 12-panel photo exhibit was produced on the subject of the marine environment and five exhibits were assembled for various meetings and conferences in Nairobi and abroad. The exhibit entitled "Tropical Forests" has been on tour three times. The UNEP video presentation "View from UNEP", which was produced in collaboration with the Television Trust for the Environment (TVE), was distributed worldwide through United Nations Information Centre offices and UNEP regional offices. With funding provided by the Government of Finland, story boards for three television spots in English, French and Arabic were written for African television networks. Ten hours of footage were filmed in the UNEP complex for inclusion in "ECOVISION 2", "OUR COMMON FUTURE", and for use by TVE and the Department of Public Information. Forty-two new films were added to UNEP's ever-expanding video/film library. These films were sent by TVE and various Governments in response to UNEP's request for audio-visual material on different regions of the world. Revisions are being made to UNEP's film and video catalogue.

### Television Trust for the Environment (TVE)

280. The future of the world environment is now the single most important issue facing politicians in the 1990s. Aware of the need to keep the public informed about environmental issues, UNEP has continued to make use of the powerful medium of television to get its message across.

281. The editorially independent TVE was set up in 1984 to catalyse programme-making on environmental topics. TVE cast itself in the role of an "enabler", generating financial resources and expertise from non-broadcasting groups to produce television programmes and films. To date, it has mobilized almost \$15 million for its projects and co-produced programmes that have been seen at least once by an audience of many millions in over 80 nations.

282. TVE takes the widest possible view of the environment. The Trust has developed four main areas of concern: Atmosphere, Terrestrial, Water and Chemicals. Its programmes have been broadcast one or more times in nearly 90 countries. TVE serves the needs of the developing world's film-makers and producers. The Trust distributes films and videos free of charge to developing countries through its Moving Pictures distribution scheme.

### Environmental law and machinery (Budget subline 313)

283. UNEP's catalytic role in 1989 accelerated the progress of environmental law on globally significant issues. At the invitation of the Government of Switzerland, the Conference of Plenipotentiaries on the Global Convention on the Control of Transboundary Movements of Hazardous Wastes was convened by the Executive Director in Basel in March 1989. The Conference was the fruition of negotiations during an organizational meeting and five sessions of the Ad Hoc Working Group of Legal and Technical Experts, held between October 1987 and March 1989. Experts from 96 States participated in the sessions of the Working Group and representatives of over 50 organizations attended as observers. As a result of these long-standing efforts by Governments and organizations, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted on 22 March 1989 by 116 participating States. The Final Act of the Conference was signed by 105 States and the European Community (EC). The main aims of the Basel Convention are to reduce generation and

transboundary movements of hazardous wastes to a minimum, to ensure environmentally sound management of hazardous wastes, and to subject to strict control measures those transboundary movements that are permissible. By December 1989, 40 States and the EC had signed the Convention; one State had ratified the Convention and ten others had initiated the ratification process. In accordance with Article 25 of the Convention, it will enter into force upon ratification by 20 States.

284. Article 16 of the Basel Convention provides that UNEP carry out the functions of the secretariat to the Convention on an interim basis, pending the first meeting of the Conference of the Contracting Parties, which shall be convened not later than one year after entry into force. The interim secretariat, located in Geneva, started its duties in November 1989. Its tasks include the promotion of signature and ratification of the Convention, the implementation of the resolutions adopted by the Conference, and the provision of technical assistance to developing countries in the fields enumerated in the Convention.

285. On 1 January 1989, the Montreal Protocol on Substances that Deplete the Ozone Layer entered into force. At that time there were 30 Contracting Parties, representing over 84 per cent of the 1986 global consumption of the substances controlled by the Protocol. By December 1989, 49 States and the EC had ratified, approved, accepted or acceded to the Protocol. At the London Conference on Saving the Ozone Layer, which met from 5 to 7 March 1989 and was attended by 123 countries, a considerable number of countries announced that they would shortly become parties or would seriously consider doing so.

286. From 26 to 28 April and 2 to 5 May 1989 respectively, the Conference of Parties to the Vienna Convention and the First Meeting of the Parties to the Montreal Protocol were held in Helsinki, Finland. The Helsinki Declaration on the Protection of the Ozone Layer, adopted by 81 countries and the EC at Helsinki on 2 May 1989, invited all countries to become parties to the Vienna Convention and the Montreal Protocol and agreed to phase out the production and the consumption of CFCs controlled by the Montreal Protocol as soon as possible, but not later than the year 2000. For that purpose, those countries agreed to tighten the timetable agreed upon in the Montreal Protocol, taking due account of the special situation of developing countries, to phase out halons and control and reduce other ozone-depleting substances which contribute significantly to ozone depletion as soon as is feasible, to

commit means and resources to accelerate the development of environmentally acceptable substitute chemicals and to facilitate the access of developing countries to relevant information, research results and training as well as to develop appropriate funding mechanisms to facilitate the transfer of technologies.

287. Significant importance lies in the fact that the Parties to the Vienna Convention and the Montreal Protocol formally named UNEP as the secretariat for the Protocol and Convention. The secretariat was formally created in September 1989. Since the First Meeting of the Parties to the Montreal Protocol, the Open-Ended Working Group established by the Parties has held four sessions to discuss such issues as financial and other mechanisms to enable developing countries to meet the requirements of the Montreal Protocol, development of workplans required by Articles 9 and 10 of the Protocol, and adjustments and amendments to the Montreal Protocol. Additionally, there was a meeting of an Ad Hoc Working Group of Legal Experts on Non-Compliance with the Montreal Protocol, a meeting of the Bureau of the Parties, and several informal meetings of experts to discuss various topics of concern to the Parties.

288. Throughout 1989, UNEP was also active in the preparation of other legal instruments on global environmental issues. In accordance with Governing Council decision 15/36 on global climate change, the Executive Director of UNEP and the Secretary-General of WMO were requested to begin preparations for negotiations on a framework convention on climate. As a consequence, they established a small joint task force to advise on the preparation of such a convention. The task force, composed of representatives of both organizations, the Co-ordinator of the Second World Climate Conference and several experts in their personal capacity, met in Nairobi in June 1989 to begin to draft elements of a climate convention as well as plans for the negotiation process. A meeting was also held in New York in October 1989 to further develop a timetable of activities leading to the elaboration of a convention on climate change.

289. The first session of the Bureau of the Intergovernmental Panel on Climate Change (IPCC) was held in Geneva in February 1989 to receive reports from the three working groups established by the Panel (see paragraphs 46 and 50). The second session took place in Nairobi in June 1989 (see paragraph 51).

The forthcoming interim report of IPCC will be used to provide the elements for the development of a global convention on climate change.

290. The Governing Council in its decision 15/34 requested UNEP to formulate a legal instrument on conservation of global biological diversity (see paragraphs 148-149). In co-operation with FAO, Unesco, IUCN and other relevant organizations and secretariats of conventions dealing with biological diversity, in 1989 UNEP began to develop a global framework convention on this subject. In their meeting in Nairobi in September 1989, senior advisors to the Executive Director deliberated on the socio-economic aspects of conservation of biological diversity and recommended the need for wide consultation at the regional level before entering into the negotiation process for a convention. In November 1989, legal experts from FAO, IUCN and UNEP met in Geneva to consider the legal aspects of a draft convention, which had been prepared by IUCN, on the basis of UNEP's comments on the draft. The participating experts recommended further improvements to a draft convention, including the provisions for the socio-economic aspects of conservation of biological diversity. An informal meeting of secretariats of some international conventions relating to biological diversity was held in Geneva in December 1989 in order to discuss modalities of co-operation between existing conventions and the proposed global framework convention.

291. UNEP also discharged important functions in developing guidelines and principles related to the international trade in toxic chemicals. After twelve years' elaboration of the mandate by Governing Council decision 85 (V) of 25 May 1977 on potentially harmful chemicals, which had been followed by the Provisional Notification Scheme for Banned and Severely Restricted Chemicals (1984) and the London Guidelines for the Exchange of Information on Chemicals in International Trade (1987), the Governing Council adopted the London Guidelines in their amended form in its decision 15/30 of 25 May 1989. The amended London Guidelines include a special notification and information exchange scheme, the so-called "prior informed consent (PIC) procedure" which was incorporated into the 1987 London Guidelines through discussion by an advisory panel meeting (Geneva, December 1987), and the first (Dakar, September 1988) and second session of the Ad Hoc Working Group of Experts (New York, February 1989). PIC procedure is a means of formally obtaining and disseminating the decisions of importing countries as to whether they wish to receive future

shipments of chemicals which have been banned or severely restricted. As chemicals defined in the Guidelines include both industrial chemicals and pesticides, the amended London Guidelines have identified the joint responsibility of UNEP and FAO in operating the PIC procedure. The PIC procedure was incorporated into the International Code of Conduct on the Distribution and Use of Pesticides of FAO by the FAO Conference at its 25th session in November 1989.

292. In response to General Assembly resolution 42/183 of December 1987, the Executive Director, on behalf of the Secretary-General of the United Nations, prepared a report on illegal traffic in toxic and dangerous products and wastes, based on information provided to him by Governments and organizations. A preliminary report was presented by the Secretary-General to the Economic and Social Council in July 1988, and the final report was submitted to the General Assembly at its 44th session in 1989. Besides summarizing and analysing the information received. The report also provided recommendations on mechanisms to be devised for monitoring and controlling illegal traffic in hazardous wastes, taking into account the provisions of the Basel Convention.

293. UNEP's Environmental Law Unit in 1989 also provided assistance to the UNEP Ocean and Coastal Areas Programme Activity Centre (OCA/PAC) by, inter alia, drafting and negotiating separate conventions and protocols for the protection and management of the South and East Asian Seas. Assistance was also provided to other regional seas programmes, e.g. preparation of a draft protocol for the control of transboundary movements of hazardous wastes in the West African Coastal Region and a protocol concerning specially protected areas and wildlife for the Wider Caribbean region.

294. Technical assistance to developing countries is an important part of UNEP's activities in environmental law. Development of national environmental laws and institutions to manage environmental issues are UNEP's key contribution to this area. In 1989, UNEP received many requests from developing countries for assistance in formulating a framework of national environmental legislation and specific environmental legislation in areas such as management of hazardous wastes and toxic chemicals, as well as in the implementation of the UNEP guidelines. Dissemination of information on national and

international environmental law to Governments and organizations continued to be a daily function of UNEP's activities in environmental law.

295. Reflecting the importance of the provision of information on environmental legislation, UNEP, through the International Council of Environmental Law, continue to publish the newsletter Environmental Notes for Parliamentarians, with the support of the Inter-Parliamentary Union (IPU).

Environmental Aspects of Development Planning and Co-operation (Budget subline 314)

296. Under this sub-programme UNEP provides guidance, training and technical co-operation in respect of socio-economic policies, analytical methods and procedures for consideration of the environment in development decision-making and administration. It also clarifies linkages between environmental management and international economic co-operation, and promotes their mutual support. Following the publication of Our Common Future, and the adoption by the General Assembly of the Environmental Perspective to the Year 2000 and Beyond, a number of Governments initiated national level consultations to incorporate environmental management and development objectives into policies, programmes and plans. In 1989, UNDP and the World Bank supported national seminars and the preparation of environmental action plans in several developing countries and UNEP collaborated in these.

297. In 1989, UNEP disseminated the Environmental Perspective to the Year 2000 and Beyond as an illustrated publication to various departments of Governments, including those of finance and economic planning, and to development institutions, NGOs and research institutions. Several countries, for example, Denmark, Finland, India, Malaysia, Norway, have prepared national-level policy papers aimed at putting into practice the main recommendations of Our Common Future and the Environmental Perspective. UNEP worked with the United Nations Department of International Economic and Social Affairs in the preparation of the Economic Perspective to the Year 2000, and with the ACC Task Force on Long Term Development Objectives to support the work of the Committee of the Whole of the United Nations General Assembly on the nature and scope of the International Development Strategy for the 1990s.

298. In consultation with UNDP, World Bank, UNIDO, FAO, WHO and ILO, in 1989 UNEP continued to develop a programme of pilot technical co-operation, to be implemented in four developing countries, on integration of environmental factors into development planning. An inter-agency steering committee was established and a methodological approach was agreed on the substance and modalities of providing such assistance over the next three years. Preliminary contacts were established with Costa Rica, Malaysia, Mali and Seychelles for the phased implementation of the pilot programme. The programme will be of assistance in reinforcing the systematic consideration of the environment in development decision-making and administration, and initiating co-ordinated technical co-operation to help sustain such a process. The lessons of the experiment will be disseminated widely.

299. In collaboration with UNEP, in 1989 the Government of Nepal prepared technical overviews on how environmental management of agriculture and forestry and people's access to drinking water supply, sanitation and waste disposal might be improved over the next development plan period. The overviews will be reviewed at an inter-departmental meeting, to be convened by the National Planning Commission, UNDP and UNEP, to agree on the policy, programme and procedural adjustments required to pursue effectively the major environmental objectives over the next plan period. During 1989, UNEP assisted UNDP, Bangladesh, in designing a draft technical co-operation programme for environmental management, to be implemented as a Government of Bangladesh/UNDP project, with UNEP's technical assistance.

300. UNEP and the Government of Japan co-sponsored an international conference entitled "Global Environment and Human Response: Towards Sustainable Development", held in Tokyo from 11 to 13 September 1989. As a major part of the agenda, along with the global issues of climate change and tropical deforestation, the conference examined the issue of economic development and environmental pollution in the developing countries, and agreed on broad recommendations on national action and international co-operation.

301. In collaboration with the Committee on International Projects, USSR, in October 1989 UNEP convened the second workshop on methodologies and procedures to integrate environmental objectives into economic development in planned economies. In view of the fact that the centrally planned

economies have increasingly been introducing market mechanisms into their economic systems, the workshop provided background papers and expert advice on the use of pricing, taxation, charges, marketable permits and other economic instruments in environmental planning and management. It is envisaged that the workshop will increasingly provide a regular forum to examine and draw conclusions from East-West and North-South experience in the methodical consideration of environmental objectives in economic planning and administration.

302. The Arab Planning Institute, Kuwait, with the membership of seventeen Arab countries, has been organizing short-term training courses in various aspects of development for planners from member countries. With UNEP collaboration and with the support of the Arab Fund, the Kuwait Fund and the Arabian Gulf University, it has agreed to hold an annual four-week training course in environmental economic analysis for development planners from the Arab region. An expert workshop was held in Kuwait from 21 to 25 October 1989, under the joint auspices of the Arab Planning Institute, UNEP and Arabian Gulf University, to agree on the broad curriculum and programme for such a course. The first such course, which will draw from available methodological work as well as case studies from the Arab region, is expected to be held in 1990.

303. In collaboration with the Government of Indonesia and Padjadjaran University, Bandung, UNEP held a second training seminar on environmental impact assessment in the appraisal of development projects in November 1989. The seminar emphasized the need for and the feasibility of relating environmental impact assessment procedure to economic appraisal of development projects, so that it contributes in a cost-effective manner to decision-making on development. The seminar also focused on the participants' exchange of experiences in the application of environmental impact assessment in the respective countries.

304. To respond to the South Pacific countries' needs for procedures and institutional arrangements to carry out environmental assessment of development initiatives, and to strengthen the countries' capabilities to use environmental impact assessment, social benefit cost analysis and integrated coastal area planning, in 1989 UNEP, in consultation with SPREP, prepared a programme of assistance in the field.

305. Notwithstanding the application of analytical methods in decision-making, it is essential to reconcile social, economic and environmental objectives in development by means of organized participation of different interest groups. During the year under review, UNEP held consultations with the Conservation Foundation (United States) which has long-standing experience in resolving conflicts relating to environmental management, in order to develop a programme of case study analyses and action in the developing countries in this field.

306. Without adequate advance notice to trading partners, and in the absence of the developing countries' ready access to the technology and expertise required, the introduction of stringent environmental standards can at times cause a sudden loss of markets and foreign exchange earnings. The International Trading Centre, in consultation with UNEP and in collaboration with bilateral donors, initiated the first phase of a project to examine the feasibility and modalities of providing technical co-operation to developing countries to help them achieve trade expansion in environmental management and technology.

307. UNEP continued its collaboration with ECLAC aimed at applying available methodologies in the design of pilot projects to meet economic, social and environmental objectives simultaneously. A collection of feasibility studies on six such pilot project ideas in Argentina, Chile, Colombia, Ecuador, Honduras and Peru was published by ECLAC. Workshops to promote the implementation of these project ideas and establish the institutional prerequisites for the purpose were held in Ecuador, Honduras, and Peru. A regional workshop was convened in Cartagena, Colombia. The major challenge now is the mobilization of commitments by Governments and development aid bodies to elaborate and implement the project ideas.

308. UNDP, in collaboration with the World Resources Institute and in consultation with the World Bank, UNEP and other concerned bodies, completed a report on an international conservation financing project, which examines the ways and means of mobilizing additional autonomous finance to deal with the environmental management needs of the developing countries. The report benefited from expert regional consultations and UNEP collaborated with the sponsors of the report in organizing such consultations in Harare (Zimbabwe), and Bangkok (Thailand).

#### TECHNICAL AND REGIONAL CO-OPERATION (Budget line 32)

309. Work under this heading falls largely to the UNEP regional offices whose activities in 1989 have been described in the preceeding chapter.

#### EVALUATION AND FOLLOW-UP

310. Although located in the Office of the Executive Director, one of the main functions of Follow-up and Evaluation Section (FUES) is to assist the Office of the Environment Programme in incorporating evaluation findings into programme and project formulation.

311. The project development and approval process has three major steps designed to involve all available expertise in UNEP. The first step is a peer review of the project proposal by the Project Screening Committee, which decides whether the proposal is on project design worth developing into a fully fledged project and, if so, gives guidance to the Programme Officer in charge of the project. The second step consists of the Programme Officer circulating the fully developed project document in-house for comments. The third step (for projects involving \$100,000 and above) consists of a review by top management in the Project Review and Evaluation Committee (PREC). PREC is the ultimate policy body that can approve, modify or reject a project.

312. FUES acts as a secretariat to both the Project Screening Committee and PREC and is therefore in a position to assist in project formulation by incorporating into the project design the lessons learnt from past evaluations. This institutional memory helps to duplicate success stories and avoid past mistakes.

313. In addition to its project approval responsibilities, PREC reviews all in-depth evaluations undertaken by UNEP. This is a learning process which further strengthens the organization's capacity to improve its activities. PREC does not limit itself to reviewing in-depth evaluations of projects, but also considers programme evaluations and the evaluation of UNEP institutional mechanisms. These reviews often result in policy changes for UNEP.

314. During 1988 and 1989, UNEP completed 18 in-depth evaluations. These comprised evaluations of two major programmes SPREP and the Unesco/UNEP International Environmental Education Programme); evaluation of a global action plan concerning the conservation, management and utilization of marine mammals; a major assessment of the impact of UNEP in selected developing countries; two evaluations of UNEP institutional mechanisms (the Regional Offices and the Clearing-house) an evaluation of a series of oil pollution projects under the East Asian Seas Action Plan, and eleven evaluations of individual projects. Summaries of the findings of the above-mentioned evaluations of the two institutional mechanisms of UNEP were made available to the Governing Council at its fifteenth regular session for policy discussion. Summaries of some of the other in-depth evaluations were presented as representative examples in the Evaluation Report 1988 and the Evaluation Report 1989.

315. In addition, UNEP in 1988 undertook a series of eight desk evaluations of selected training courses partially or wholly sponsored by the organization, in order to determine their impact. The findings of these evaluations were presented in the Evaluation Report 1988. In 1989, UNEP undertook a series of five desk evaluations of public awareness and information projects. The findings of these evaluations are presented in the Evaluation Report 1989.

316. In the two-year period 1988-1989, project managers prepared 50 self-evaluations of completed projects. Since the formal requirement for self-evaluation of completed projects was introduced in 1986, the process of learning from past experiences has increased significantly, leading to better formulation of new projects. In addition, the quality of self-evaluation has gradually improved.

317. In 1988, UNEP, in consultation with Governments and its partners in the United Nations system, introduced a new project evaluation methodology. The methodology is not limited to the manner in which evaluations are done, but also suggests feed-back mechanisms to ensure that evaluation findings are internalized. Further methodological work has been attempted, through the formulation of a proposed methodology for evaluating large multidisciplinary programmes, which could also be applicable to the system-wide medium-term environment programme.

318. Although not part of its normal responsibilities, UNEP collaborated with the United Nations Department for International Economic and Social Assistance in the preparation of the Cross-Organizational Programme Analysis of the activities of the United Nations system in the area of environment, which was presented to the Economic and Social Council in 1988 (see document E/AC.51/1988/7).

## **Chapter IV**

### **INTERGOVERNMENTAL LEGISLATION OF RELEVANCE TO UNEP**

**UNEP Governing Council**

**Economic and Social Council**

**General Assembly**

## INTERGOVERNMENTAL LEGISLATION OF RELEVANCE TO UNEP

1. During 1989, the Governing Council of UNEP, the Economic and Social Council and the General Assembly continued to monitor and guide the work of the UNEP Secretariat. The relevant legislative measures adopted by each of those bodies in 1989 are briefly described below.

### UNEP GOVERNING COUNCIL

2. The Council, met for its fifteenth regular session in Nairobi from 15 to 26 May 1989, attended by an unprecedented number of participants, including delegations from 103 countries, 42 at the ministerial level. At the session the Council adopted a record number of 46 decisions, 45 of them by consensus. The decisions fall into three general categories: matters of general policy (1-16), programme matters (17-41) and administrative and financial matters (42-46).

### GENERAL POLICY

#### GC decision 15/1 - Strengthening the role and effectiveness of UNEP

3. This decision is divided into six sections. In the first the Council reaffirmed UNEP's essential role as the central catalysing, co-ordinating and stimulating body in the field of the environment within the UN system and stressed the urgent need to develop this role further and to strengthen it. In the second section, the Council stressed its desire to become more effective and efficient and, consequently, decided to restructure the organization of its regular sessions so that the first week would be devoted to programme matters and to fund, finance and administrative questions, each to be considered by a sessional committee, the second week would be devoted to plenary discussion of major policy issues at the ministerial level or its equivalent. The Council decided as well to mandate the Bureau of its fifteenth session, on an experimental basis, to meet with the bureaux of the counterpart organs of other UN bodies to develop more positive and collaborative relationships. In the third section, the Council welcomed the establishment of UNEP national committees in a number of countries and urged Governments to encourage similar action in their countries and requesting the Executive Director to support such efforts.

4. In the fourth section of the decision, the Council decided that UNEP should direct its efforts to the following eight areas of concentration 1/ and called upon the international community to do likewise:

Protection of the atmosphere by combating climate change and global warming;

Depletion of the ozone layer, and transboundary air pollution;

Protection of the quality of freshwater resources;

Protection of ocean and coastal areas and resources;

Protection of land resources by combating deforestation and desertification;

Conservation of biological diversity;

Environmentally sound management of biotechnology;

Environmentally sound management of hazardous wastes and toxic chemicals; and

Protection of human health conditions and quality of life, especially the living and working environment of poor people, from degradation of the environment. Within each of these areas, the Council also decided that UNEP should give special attention to the following issues: combating climate change; combating the depletion of the ozone layer; management of shared freshwater resources; control of pollution in regional seas and proper management of their coastal areas; halting desertification and deforestation; conservation of biological diversity within a broad socio-economic context; and minimization of hazardous wastes through the development of low- and non-waste technologies and the environmentally sound management of hazardous wastes and potentially toxic chemicals.

5. In the fifth section of decision 15/1, the Council decided to strengthen the financial resources of the Environment Fund and set a target of \$100 million for contributions to the Fund by 1992. Governments were called upon to increase their contributions by at least 35 per cent each year from the level of 1 January 1989, so that this target might be met within three years. In the final section of decision 15/1, the Council

confirmed that the Programme it had approved for the biennium 1990-1991 2/ did not cover all the urgent environmental activities it wished UNEP to undertake during those two years and that the additional tasks specified by the Executive Director in his supplementary programme 3/ should be implemented as soon as additional resources became available.

GC decision 15/2 - Implementation of resolutions and decisions of direct relevance to UNEP adopted by the General Assembly at its forty-second and forty-third sessions and by the Economic and Social Council at its sessions in 1987 and 1988

6. The Council noted with satisfaction the action taken by the Executive Director in implementing these resolutions and decisions and annexed to the decision its views on efforts towards sustainable and environmentally sound development, as well as suggestions on long-term strategies and new environmental concerns which were to be incorporated into the draft report of the Secretary-General to the General Assembly on the implementation of General Assembly resolutions 42/186 and 42/187. The Council annexed to decision 15/2 a statement on its understanding of the term "sustainable development". In the view of the Council, it did not in any way imply encroachment upon national sovereignty or represent a new form of conditionality in aid or development financing.

GC decision 15/3 - United Nations conference on environment and development

7. In this decision, the Council decided to recommend to the General Assembly a broad spectrum of elements for inclusion in an Assembly resolution on the subject. The elements, annexed to the decision, concerned the scope and date of such a conference as well as the modalities of preparation and of holding it.

GC decision 15/4 - Special session of the Governing Council in 1990

8. By this decision the Council decided to hold a three-day special session in 1990, immediately preceding and at the same venue as the first meeting of the preparatory committee for the 1992 UN conference, to deal with the elaboration of priority environmental issues, in particular ways and means of enhancing the role of UNEP within the UN system in addressing these problems.

GC decision 15/5 - Contribution of the Governing Council of the United Nations Environment Programme to the preparation of an international development strategy for the fourth UN development decade

9. The Council recommended to the General Assembly that sustainable and environmentally sound development should become a central guiding principle in that strategy. It invited the Assembly's ad hoc Committee of the Whole for the preparation of the strategy to recognize and reflect fully in the strategy that all countries had a common interest in pursuing policies aimed at universal sustainable and environmentally sound development through equitable and sustainable use of global resources and to reaffirm in the strategy that the critical objectives for environment and development policies based on sustainable development must include creating a healthy, clean and safe environment; reviving growth and improving its quality; remedying the problems of poverty through raising the standard of living and the quality of life; addressing the issues of population and of conserving and enhancing the resource base; reorienting technology and managing risk; and merging environment and economics in decision-making.

GC decision 15/6 - Economic crisis, foreign debt and the environment

10. The Council decided to bring to the attention of Governments, multilateral organizations and governmental and non-governmental financial institutions the need to improve existing conditions for the treatment of the foreign debt of developing countries in order to strengthen their capacity to address the critical environmental issues fundamental to development and protection of the environment.

GC decision 15/7 - Co-operation between UNEP and the Council of Arab Ministers Responsible for the Environment

11. Taking into account the increasing environmental relevance of the Arab Declaration on the Environment, 4/ the Governing Council requested the Executive Director to provide, within the framework of regional co-operation and within available resources, technical and financial assistance to the priority programmes of the Council of Arab Ministers Responsible for the Environment. 5/ It also requested the Executive Director to take appropriate actions to support the technical secretariat of the Council of Arab Ministers Responsible for the Environment.

GC decision 15/8 - The environmental situation in the occupied Palestinian and other Arab territories

12. The Council considered the report of the Executive Director on this subject. It emphasized its concern over certain practices of the Israeli authorities and stressed the fact that these sources of concern could not be monitored by one consultant alone, working in difficult circumstances. It expressed regret, too, for Israel's lack of co-operation in failing to admit the consultant into the occupied territories to carry out his UNEP mission. Noting that the Executive Director's report made no reference to the environmental situation in various other areas as requested in its decision 14/4, the Council considered this report inadequate. Therefore it requested the Executive Director to form a group of environmental specialists to prepare a comprehensive report on the environmental situation in these territories, and that this report be submitted for consideration at its sixteenth regular session.

GC decision 15/9 - International co-operation for the protection of mankind and environment against the devastating effects of chemical and other weapons of mass destruction

13. In this decision the Council recognized the need for international scientific and technical co-operation for protection from the devastating effects of chemical and other weapons of mass destruction. It therefore requested the Executive Director to prepare a comprehensive report on the effects of chemical weapons on human health and the environment, as well as ways and means of strengthening international co-operation in this regard, for submission at its sixteenth regular session.

GC decision 15/10 - A UN centre for urgent environmental assistance

14. Addressing the importance of international co-operation in environmental emergencies the Council requested the Executive Director to invite Governments, as well as UN bodies and specialized agencies and competent regional organizations, to express their views on the need for a UN centre for urgent environmental assistance and its possible objectives, scope and functions. He was also asked to assess the possible contribution to such a centre of existing UNEP activities, as well as those of relevant UN bodies and specialized agencies.

On the basis of these views and this assessment, he was requested to assess the advisability of establishing such a centre, as well as of determining its financial implications, if any, to inform the General Assembly accordingly at its forty-fourth session and to report on this matter to the Council at its sixteenth regular session.

GC decision 15/11 - Reports of the Administrative Committee on Co-ordination

15. The Council expressed appreciation to ACC for its 1987 and 1988 reports on co-ordination in the field of the environment. Welcoming ACC's agreement to examine modalities for strengthening co-ordination in this field throughout the UN system, the Council recommended that the Committee take into account, inter alia, the recommendations contained in the Environmental Perspective to the Year 2000 and Beyond, 6/ as well as the Council's earlier recommendations concerning co-ordination. The Council also took note of the attention paid by ACC to the issues of climate change, hazardous wastes and biological diversity, 7/ as well as the Committee's report on sustainable and environmentally sound development. 8/

GC decision 15/12 - Provision of language facilities for meetings of the Committee of Permanent Representatives

16. Recognizing the requirements for full language services for meetings of the Committee of Permanent Representatives, the Council decided to provide such services as soon as the necessary funding could be obtained from the regular UN budget.

GC decision 15/13 - State-of-the-environment reports

17. This decision has three sections. In the first, the Council called the attention of Governments, IGOs and NGOs to the salient findings of the 1988 and 1989 reports, 9/ emphasizing the necessity of public participation and public information for environmental protection. The Executive Director was asked to continue giving high priority to activities for the control of global emissions of ozone-depleting substances; possible climate change and the limitation of greenhouse gas emissions; and the management of hazardous wastes. The Council authorized the preparation of the 1990 report on children and the environment in consultation with UNICEF and requested additional sections on female children, drugs and smoking, and institutional structures for

enhancing the environment of children. Further, the Executive Director was asked to continue producing state-of-the-world-environment reports in odd numbered years; to prepare a brief analytical report for presentation to the 1992 UN conference on environment and development on changes in the state of the world environment since 1972; and to prepare a comprehensive report on the state of the environment covering the decade since the Council's session of a special character in 1982 for submission at its seventeenth regular session in 1993.

18. In the second section of the decision, the Council took note of the Executive Director's report on emerging environmental issues, 10/ as well as the reservations made by various delegations concerning its material on Antarctica. 11/ The Executive Director was asked to elaborate on new technologies in his next report on emerging environmental issues, and also to include in it brief descriptions of the issues of municipal waste, plastics and the ecological situation in the Arctic.

19. In the third section, the Council requested that the Executive Director report to it, as appropriate, on the follow-up and implementation of decisions related to the annual state-of-the environment reports. 12/

#### GC decision 15/14 - The clearing-house function

20. The Council stressed the active role UNEP could and should play in helping to provide and mobilize the assistance needed by developing countries and expressed concern that UNEP had not yet attracted sufficient resources to fulfill this role significantly. The Council reaffirmed the clearing-house function as an essential aspect of UNEP's co-ordinating and catalytic role. The clearing-house function also involved focusing on activities which enabled developing countries to establish and strengthen their policies, institutions and professional capacity to integrate environmental considerations into their development policies and planning; and to formulate and initiate programmes and activities for dealing with environmental problems at the national, regional and global levels.

21. The Council reiterated its call to Governments and other donors to consider favourably UNEP requests for resources as well as direct requests from developing countries for support to activities conceived with UNEP assistance or designed to

enable the country to participate actively in its programme. The Council requested the Executive Director to consider revising terminology to clarify the clearing-house function, and continue his efforts to obtain additional resources to manage and implement clearing-house activities. It invited him to ensure that UNEP clearing-house activities were made more widely known. Finally, the Council requested the Executive Director to study and implement organizational arrangements to make UNEP more efficient in assisting developing countries.

GC decision 15/15 - The regional office system

22. The Council welcomed the Executive Director's intention to strengthen relationships between UNEP's regional offices and the relevant offices of UNDP, the World Bank, the regional development banks and the UN regional commissions, as well as to improve the management and administration of the regional offices. It also approved the Executive Director's proposal to reduce the charges to the programme and programme support costs budget by 11.4 per cent. <sup>13/</sup> The Council requested the Executive Director to consult with the Governments concerned about the establishment of subregional offices as soon as financial resources became available and noted his intention to establish a regional relations unit at UNEP headquarters to serve the needs of the regional offices. In addition, it requested him to continue his support to the Cairo Programme for African Co-operation in accordance with the priorities and decisions reached by AMCEN at its third session. <sup>14/</sup> Finally, the Council invited the governing bodies of UNDP, the World Bank, and the regional development banks to support the development of stronger relationships among their relevant field offices to enhance immediate and sustainable development and invited the regional economic and social commissions to play a more active role in DOEM activities.

GC decision 15/16 - Sixth Ministerial Meeting on the Environment in Latin America and the Caribbean

23. In this decision the Council took note of the Declaration of Brasilia, adopted by the Sixth Ministerial Meeting and annexed it to its decision. <sup>15/</sup> The Declaration set out the urgency of establishing a balance between socio-economic development and environmental protection and conservation. It reaffirmed the principle of national sovereignty for each State's management of its natural resources and underlined the need for international co-operation to this end. It also asked

international financing institutions to grant sufficient additional resources on concessional terms for environmental protection projects, and called upon industrialized countries to increase technical and financial contributions to developing countries as well as their effective support to UNEP. The Council requested the Executive Director to transmit this Declaration to Governments, IGOs and NGOs and to inform other interested entities of it.

#### PROGRAMME MATTERS

##### GC decision 15/17 - Regional and subregional programmes in Latin America and the Caribbean

24. The Council requested the Executive Director to support the plans and programmes already being implemented in the region in accordance with its decision 14/21 and the decisions adopted by the Sixth Ministerial Meeting on the Environment in Latin America and the Caribbean 16/ and to initiate the formulation of an Action Plan for the Environment for Latin America and the Caribbean. The Council urged the Executive Director to initiate as soon as possible the programmes selected for priority at that meeting.

##### GC decision 15/18 - Co-operation between UNEP and the UNCHS (Habitat)

25. The Council requested the Executive Director, in consultation with the Executive Director of Habitat, to continue and increase co-operation between the two bodies, 17/ notably with respect to the application of the Environmental Guidelines for Settlements Planning and Management in selected metropolitan areas and, inter alia, the special needs of the coastal settlements likely to be affected by global climate change.

##### GC decision 15/19 - Preservation and management of cultural and natural heritage in Western Asia

26. The Council took note with appreciation of the Joint Inspection Unit (JIU) report on the subject and the comments of the Executive Director thereon. 18/

GC decision 15/20 - Programme budget of UNEP for the biennium 1990-1991

27. Commending the organizations of the UN system for their contributions to the preparation of the programme budget for the biennium 1990-1991 19/, the Council called upon them to co-operate fully with the Executive Director in implementing the programme and approved the programme budget.

GC decision 15/21 - System-wide medium-term environment programme for the period 1990-1995

28. The Council decided that while SWMTEP II 20/ did not need immediate formal revision, its development and implementation should continue in the course of ongoing joint programming. This would result, inter alia, in future biennial environment programmes of UNEP and other UN bodies reflecting more closely the structure and recommendations of the Environmental Perspective to the Year 2000 and Beyond and taking into account the report of the World Commission on Environment and Development. The Council also decided that at its seventeenth regular session, it would provide ACC with its views as policy guidance for the preparation of SWMTEP III, covering the period 1996-2001.

GC decision 15/22 - Report of the Secretary-General on the effects on the environment of the dumping of nuclear wastes

29. Taking note of this report, 21/ the Council transmitted it to the General Assembly for consideration at its forty-fourth session. The Council requested the Executive Director to participate fully in the preparation of an internationally agreed code of practice for international transactions involving nuclear wastes 22/.

GC decision 15/23 - Desertification

30. This decision is divided into four sections. The first is devoted to the implementation of the Plan of Action to Combat Desertification (PACD). The Council invited the Governments of desertification-prone countries to consider according priority in their national development plans to a variety of anti-desertification activities. It invited donor Governments, intergovernmental bodies, including aid agencies, and NGOs to accord high priority in their bilateral and multilateral assistance activities to national programmes for combating

desertification and rehabilitation of degraded land resources. Commending the Inter-Agency Working Group on Desertification for ensuring that activities related to arid lands and desertification were included in the programmes of its member organizations, the Council requested that the Group implement several measures to enhance its work.

31. In addition, the Council requested the Executive Director to assist desertification-prone countries in developing programmes for combating desertification within their development plans and asked him to include in the programme budget for 1990-1991 activities on pastoral nomadism. Finally, the Council asked the Executive Director to arrange for an external evaluation of PACD whose results might be presented well in time for the 1992 UN conference on environment and development, but not later than the sixteenth regular session of the Governing Council in 1991.

32. In the second section of the decision concerning financing and other measures in support of PACD, the Council recommended to the General Assembly that the UN Special Account to finance PACD be abolished and that the Consultative Group on Desertification hold biennial sessions. In addition, the Council invited the international community to pledge voluntary contributions for financing the implementation of PACD.

33. The third section of the decision was devoted to the implementation of PACD in the Sudano-Sahelian region. The Council commended UNSO on the steps it had taken towards the implementation of PACD in 22 countries of the region and authorized the Executive Director to continue support to UNSO as a joint venture with UNDP.

34. In the final section of the decision the Council authorized the Executive Director to submit his report on the implementation of PACD on its behalf through the Economic and Social Council to the General Assembly at its forty-fourth session. It annexed to the decision a draft resolution for the Assembly's consideration.

#### GC decision 15/24 - Sustainable agriculture

35. The Council recommended that a joint FAO/UNEP meeting on the subject be convened within the framework of the 1992 United Nations conference on environment and development with a view to reviewing ways of integrating agricultural production

and environmental policies world-wide; to elaborating a world strategy to guide agricultural policies at the national and international levels and formulating recommendations for practical action to promote sustainable agriculture.

GC decision 15/25 - Oil pollution of the Red Sea

36. The Council requested the Executive Director to take the necessary measures to prepare an inventory of available equipment and expertise for combating, surveying and containing pollution, as well as for shore clean-up of pollution by oil and other harmful substances. In addition, the Council requested that, where they did not exist, regional or subregional arrangements should be created for this purpose to facilitate immediate response on either a reciprocal or a payment basis.

GC decision 15/26 - Plan of action for the surveillance, ecological assessment and clearance of war-related pollution, objects and wrecks in the sea area of the Kuwait Action Plan region

37. The Council requested the Executive Director to provide, within available resources and in co-operation with IMO, assistance to ROPME in the implementation of its action plan to survey and carry out environmental impact assessment and clearance of wrecks and other objects affecting navigation, fishing and the marine environment.

GC decision 15/27 - Precautionary approach to marine pollution including waste-dumping at sea

38. Taking note of a number of global conventions relevant to marine pollution, as well as the adoption of the "principle of precautionary action" by the Second International Conference on the Protection of the North Sea 23/, the Council recommended that all Governments adopt this principle as the basis of their policy for preventing and eliminating marine pollution.

GC decision 15/28 - International Register of Potentially Toxic Chemicals

39. The Council requested the Executive Director to continue to give high priority to the Register's work and asked him to solicit extrabudgetary resources from Governments in the form of counterpart contributions to cover IRPTC needs. The Council

approved the revised objectives and strategies of IRPTC to reflect accurately the Register's expanded responsibilities, and invited the Executive Director to strengthen the Register to assist developing countries in the field of legal and institutional arrangements for managing chemicals at the national level and to organize training activities.

GC decision 15/29 - List of selected environmentally harmful chemical substances, processes and phenomena of global significance

40. The Council noted the progress report of the Executive Director on this subject. 24/

GC decision 15/30 - Environmentally safe management of chemicals, in particular those that are banned and severely restricted, in international trade

41. The Council adopted the amended London Guidelines for the Exchange of Information on Chemicals in International Trade 25/ incorporating the principle of Prior Informed Consent (PIC) and urged Governments to take the necessary steps for their early implementation. It noted that UNEP and FAO were both adopting PIC procedures which should complement and not duplicate each other and that the PIC procedure being developed by FAO in the context of the International Code of Conduct on the Distribution and Use of Pesticides was expected to be fully compatible with that of the amended London Guidelines and also was expected to be approved before the full implementation of the PIC procedure of the amended Guidelines. The Council recommended that UNEP and FAO share the operational responsibility for implementing PIC and jointly manage and implement common elements on the understanding that this sharing of operational responsibilities did not limit the scope of the Guidelines.

42. The Council requested the Executive Director to reconvene the ad hoc working group with a view to monitoring the implementation of the amended Guidelines with particular attention to PIC and the Guidelines' technical assistance provisions. It should review other activities related to the production and use of chemicals and prepare a report on any further steps to supplement the amended London Guidelines, including the possible need for a convention, for submission to the Council at its sixteenth regular session.

GC decision 15/31 - International conventions and protocols in the field of the environment

43. The Council took note of the report of the Executive Director on this subject 26/ and requested him to transmit it to the General Assembly at its forty-fourth session. It called on States and regional intergovernmental organizations in a position to do so, and which had not already done so, to sign, ratify, approve, accede to or accept, and implement multilateral legal instruments in this field.

GC decision 15/32 - Shared natural resources and legal aspects of offshore mining and drilling

44. Taking note of the Executive Director's report on the subject 27/ the Council called upon Governments and international organizations to take further action to implement the principles of conduct in the field of the environment for the guidance of States in the conservation and harmonious utilization of natural resources shared by two or more States, as well as the conclusions of the study of the legal aspects concerning the environment related to offshore mining and drilling within the limits of national jurisdiction.

GC decision 15/33 - Progress in the control of transboundary movements of hazardous wastes

45. The Council called upon all Governments to sign and ratify the Basel Convention on the Control of Transboundary Wastes and their Disposal so that it could enter into force as soon as possible, and to consider voluntary contributions towards the general operating costs of the interim Secretariat. In addition, the Council asked the Executive Director to develop programmes to assist developing countries in the fields enumerated in the Convention, and invited him to submit such programmes to potential donors.

GC decision 15/34 - Preparation of an international legal instrument on the biological diversity of the planet

46. The Council noted with appreciation the actions taken by the Executive Director pursuant to its decision 14/26 and agreed that the impoverishment of biological diversity and the consequent loss of natural resources of great potential economic value was a global problem whose solution required sustained multilateral co-operation. The Council noted that the

economic dimension of the problem would need careful consideration in the negotiations of any future legal instrument. Consequently, it requested the Executive Director to convene additional working sessions of the Ad Hoc Working Group of Experts on Biological Diversity to consider the technical content of a suitable new international legal instrument within a broad socio-economic context, as well as other measures that might be adopted for the conservation of biological diversity, in close co-operation with other appropriate international organizations. The Council authorized the Executive Director, on the basis of the final report of the Ad Hoc Working Group, to convene an ad hoc working group of legal and technical experts with a mandate to negotiate an international legal instrument and called upon Governments to provide the necessary financial and technical resources to permit the full and effective functioning of the ad hoc working groups. Finally, the Council requested the Executive Director to submit a progress report on the subject at the first session of the preparatory committee for the 1992 United Nations conference on environment and development, as well as to the Council at its sixteenth regular session.

GC decision 15/35 - Progress in the protection of the ozone layer

47. Having noted with satisfaction the entry into force of the Vienna Convention on 22 September 1988 and the Montreal Protocol on 1 January 1989, the Council urged all countries that had not already done so to become parties to both these instruments. The Council welcomed the results of the first meeting of the Conference of Parties to the Vienna Convention 28/ and the First Meeting of the Parties to the Montreal Protocol, 29/ in particular the Parties' request for tightening the control measures of the Protocol. The Council noted with appreciation the offer by the Government of Finland to contribute approximately 8.6 million markka to facilitate activities of developing countries within the scope of both instruments and welcomed the proposal by the Norwegian Government to set aside 0.1 per cent of its gross national income per year towards an international climate fund, provided other industrialized countries did likewise. The Council also noted the Helsinki Declaration on the Protection of the Ozone, 30/ and requested the Executive Director to support activities as approved by the Parties until the establishment of the Trust Fund and the permanent Secretariat.

GC decision 15/36 - Global climate change

48. Noting with satisfaction the establishment of the Intergovernmental Panel on Climate Change (IPCC) as an ad hoc intergovernmental working group, the Council authorized the Executive Director to continue to give strong support to it and urged all Member States of the United Nations, its specialized agencies and international organizations, including IAEA, as well as relevant IGOs and NGOs, to support fully and participate actively in the Panel's work. The Council then noted the agreement within the Panel on its main tasks - each the responsibility of a Working Group - and the Panel's intention to adopt an interim report no later than October 1990. <sup>31/</sup> The Council requested the Executive Director, in co-operation with the Secretary-General of WMO, to begin preparing for negotiations on a framework convention on climate change to be initiated as soon as possible after the adoption of the IPCC interim report.

49. The Council also recommended that, while awaiting the outcome of the negotiations, Governments and competent regional integration organizations should consider the range of options for averting the potentially damaging impacts of climate change, for removing the causes of the phenomenon and for developing programmes to implement those options appropriate to national needs, six of which were listed by the Council.

50. In addition, the Council recommended the institution of programmes and measures of assistance, including technology transfer, that would permit developing countries to avoid risk to global climate. It recommended, too, that Governments continue and, wherever possible, increase their activities in support of the World Climate Programme and the International Geosphere-Biosphere Programmes and that the international community support developing country efforts to participate in these scientific activities.

Governing Council decision 15/37 - Promotion of the transfer of environmental protection technology

51. The Council urged UNEP to continue its catalytic role to promote, with Governments, industry, research organizations and other relevant institutions, the establishment of a network for sharing information. In addition, it invited Governments to find both bilateral and multilateral arrangements to support exports of environmental protection technology, to promote

activities to disseminate more effectively information about available environmental protection technology and the know-how necessary for its appropriate use. Lastly, the Council reconfirmed four recommendations of its decision 14/16 on this subject.

Governing Council decision 15/38 - Harmonization of environmental measurements

52. The Council noted the establishment of a project for dealing with this task located in Munich and financed by voluntary contributions from the Government of the Federal Republic of Germany. 32/ It requested the Executive Director to seek support for this project from interested countries and appealed to Governments and international organizations to assist it.

Governing Council decision 15/39 - Industrial accidents

53. The Council called upon Governments, the United Nations and its specialized agencies, notably UNIDO, other international organizations, NGOs and world industry to support the APELL process. It also requested the Executive Director to set up a network of organizations and experts to facilitate the exchange of information and technology for preventing industrial accidents and providing emergency assistance.

Governing Council decision 15/40 - INFOTERRA: The International Environmental Information System

54. The Council called upon Governments to make full use of INFOTERRA services and to strengthen their INFOTERRA national focal points, as appropriate. It requested the Executive Director to consider possibilities of strengthening INFOTERRA, and asked him to provide technical and operational assistance to developing countries to enable them to participate more effectively in the international exchange of environmental information and experience.

Governing Council decision 15/41 - Environmental impact assessment

55. The Council called upon Governments to intensify the use of the Goals and Principles of Environmental Impact Assessment, 33/ and authorized the Executive Director to continue seeking views on modes of further development in this field.

## FINANCIAL AND ADMINISTRATIVE MATTERS

### Governing Council decision 15/42 - Additional sources of funding

56. The Council requested Governments to continue and increase funding for additional UNEP staff, both Junior Professional Officers and senior personnel, including staff from developing countries and to increase their financial support to specific programme activities. In addition, the Council urged IGOs, regional banks, NGOs and private corporations to increase their financial support to programme activities and requested the Executive Director to continue his efforts to secure additional support from Governments and these other sources. The Council also asked the Executive Director to ensure that all fund-raising activities be ultimately self-financing, except that Clearing-House Unit posts might be financed from the Fund, and to continue his efforts to establish the maximum practicable number of UNEP national committees.

### Governing Council decision 15/43 - Trust funds

57. The Council expressed its appreciation to contributing Governments and urged that contributions be paid on time. The Council approved the extension of six general trust funds and the establishment of four new general trust funds. In addition, the Council approved the establishment of a general trust fund for the Basel Convention for two years effective from the entry into force of the Convention. As to technical co-operation trust funds, the Council confirmed the Executive Director's extension of six and his establishment of six new ones.

### Governing Council decision 15/44 - The Environment Fund: Financial report and audited accounts for the biennium 1986-1987 ended 31 December 1987

58. Having noted the Executive Director's comments on the report of the Board of Auditors, 34/ the observations of ACABQ as set out in his note, 35/ and the financial report and accounts of the Fund for the biennium 1986-1987, 36/ the Council requested him to report at its next regular session on the actions taken in response to the Advisory Committee's observations relating to UNEP. 37/

Governing Council decision 15/45 - Programme and programme support costs

59. The Council noted that in 1988 the Executive Director had been able to limit programme and programme support costs (PPSC) to 33 per cent of estimated contributions and that he would endeavour to do so in 1989. 38/ The Council therefore approved the revised appropriation for the biennium 1988-1989, 39/ as well as the appropriation for the PPSC for the biennium 1990-1991, 40/ requesting him to administer these funds with the utmost economy and restraint. The Council also approved the redeployment of several posts and, in addition, the Executive Director's proposals to transfer the costs of various staff and other expenses from the PPSC budget to that for Fund programme activities. 41/

Governing Council decision 15/46 - Management of the Environment Fund in the biennium 1988-1989 and use of resources in the period 1990-1993

60. The Council agreed with the Economic and Social Council on the necessity of increasing Fund resources substantially, 42/ and expressed its appreciation to those Governments that had paid their contributions for 1988 and 1989 early in those years. It appealed to those that had not yet made a pledge for 1989 to do so at a higher level than that of 1988 and urged all Governments to pay their contributions either before the year for which they were pledged or as early as possible in that year. Further, the Council appealed to all Governments to pledge contributions for the biennium 1992-1993 at an increasing rate so that the Executive Director might have a firm basis on which to plan future programmes.

61. The Council approved an appropriation of \$68 million for the Fund Programme for 1990-1991 and apportioned among the 13 programme components with a request that the Executive Director allocate resources so that core activities would receive first priority in implementation. It also approved an appropriation of \$4 million to the Fund Programme reserve. Reconfirming the Executive Director's authority to adjust the apportionment for each budget line by 20 per cent, the Council emphasized the need to maintain the Fund's liquidity at all times and authorized the Executive Director to enter into forward commitments not exceeding \$16 million for Fund Programme activities for 1992-1993. Finally, the Council requested the Executive Director to draw up the 1992-1993 programme for Fund

activities and Fund reserve activities of \$180 million, with a core programme of \$150 million and a supplementary programme of \$30 million.

#### ECONOMIC AND SOCIAL COUNCIL

62. In accordance with General Assembly resolution 39/217 of 1984, in which the Assembly laid out a biennial programme of work for its Second Committee, ECOSOC would normally take up the report of UNEP's Governing Council only in even-numbered years, while the Assembly's Second Committee would consider it in odd-numbered years. However, given the increasing urgency of environmental questions and heightened world-wide awareness of their bearing on items such as natural resources and transnational corporations, ECOSOC discussed matters involving UNEP's activities at both its regular sessions in 1989. Four resolutions were adopted during its first regular session and another three, as well as one decision, during its second session. Only those elements that concern UNEP directly are summarized below.

#### Resolution 1989/7 - Water resources and progress in the implementation of the Mar del Plata Action Plan 43/

63. Expressing its deep concern at the obstacles encountered by developing countries in preventing such natural disasters as flooding, the Council took note of the Secretary-General's report on improved efficiency in the management of water resources and developments in co-operative action concerning shared water resources. 44/ The Council also urged the organizations of the UN system to intensify their efforts and increase their activities in water resources management with a view to strengthening the capacities of developing countries in water resources development.

#### Resolution 1989/8 - New techniques, including remote sensing, for identifying, exploring for and assessing natural resources

64. Having considered the Secretary-General's report on an information referral system for satellite remote-sensing data, 45/ the Council called upon developed countries to expand the sharing of their technical capacity in this field with developing countries. Further, it requested the Secretary-General to explore appropriate ways and means by which the developing countries could gain better access to remote sensing systems so as to optimize the exploration and

exploitation of their natural resources. It also asked that the developed countries assist him in identifying new approaches and modalities to facilitate the transfer of new and emerging remote sensing technologies to the developing countries. In addition, the Secretary-General was requested to intensify his efforts in the dissemination of available remote-sensing software packages, both commercial and public, for the exploration, management and development of natural resources through application-oriented workshops, seminars and training courses in developing countries.

Resolution 1989/25 - Transnational corporations and environmental protection in developing countries

65. Noting with satisfaction the adoption of the Basel Convention, re-stating its awareness of UNEP's co-ordinating role in the field of the environment and emphasizing the need for all transnational corporations to develop further and apply technologies that were neither pollution-intensive nor environmentally hazardous, the Council took note of the Secretary-General's report on transnational corporations and issues concerning the environment 46/ and requested that he undertake a variety of tasks in this area: (a) an analytical study of the main areas of activity that affect the environment adversely, as well as the factors that determine the allocation of activities between developed and developing countries; (b) continue to develop ways and means of strengthening the participation of large industrial enterprises in efforts to preserve and protect the environment; (c) gather data on existing sources of information on environmentally hazardous technologies and the availability of alternatives and make recommendations for increasing and facilitating the effective transfer of such alternative technologies to developing countries; (d) identify ways in which developing countries in particular might benefit from the experience of others in relation to the activities of industrial enterprises, and (e) examine the feasibility of establishing a fund financed by voluntary contributions from transnational corporations and devoted to supporting the efforts of developing countries to protect the environment.

Resolution 1989/62 - Concerted international action against the forms of crime identified in the Milan Plan of Action, 47/

66. The Council was deeply preoccupied by these causes, including crimes against the environment. Having noted with

appreciation the report of the Secretary-General on proposals for concerted action against these and other crimes with transboundary consequences, 48/ the Council invited Governments, international organizations, concerned NGOs in consultative status with ECOSOC, and other decision-making bodies to examine these recommendations with a view to implementing them. It also urged Governments to examine existing domestic legislation with a view to enacting measures that would protect the natural environment and establish adequate compensation for the victims of environmental crime. The Council reiterated the need for international co-operation in preventing, combating and monitoring all actions leading to the dumping of toxic nuclear and industrial waste in developing countries, in close co-operation with UNEP and IAEA, and invited Governments to exercise stricter and more effective control over the industrial or other sectors that could be involved in such conduct. Finally, the Council decided that the topics of transnational crime against the environment and against the cultural patrimony of countries should be considered by the Eighth United Nations Congress on the Prevention of Crime and the Treatment of Offenders.

Resolution 1989/87 - Convening of a UN conference on environment and development

67. At the second regular session in 1989, ECOSOC decided to transmit to the General Assembly at its 44th session for consideration and appropriate action, decision 15/3 of UNEP's Governing Council and the views on the convening of such a conference expressed during its own discussion of international economic and social policy, including regional and sectoral developments, and environment in the context of development and international economic co-operation.

Resolution 1989/101 - Strengthening international co-operation on the environment: provision of additional financial resources to developing countries

68. Having taken note of the report of the Executive Director, 49/ ECOSOC concluded that increasing attention had to be paid to the provision of new and additional financial resources to developing countries for environmental programmes and projects so as to ensure that their developmental priorities were not adversely affected and that such provision should be kept under more effective and continuous review. In addition, the Council recommended that during the preparatory process for the

proposed conference, as well as at the conference itself, this question should be carefully considered so as to enable the conference to establish modalities for effective monitoring or review to provide a factual basis for promoting effective action.

#### Resolution 1989/102 - Plan of Action to Combat Desertification

69. ECOSOC decided to transmit to the General Assembly at its 44th session the reports of the Secretary-General 50/ and the Administrator of UNDP, 51/ and decision 15/23 of UNEP's Governing Council, as well as the draft resolution contained in the annex to decision 15/23 D, together with the views and comments expressed at this ECOSOC session.

#### Decision 1989/177 - Reports considered by ECOSOC in connection with the question of the environment

70. The Council took note of the report of the Secretary-General on products harmful to health and the environment, 52/ the report of the Executive Director on the protection of the ozone layer, 53/ the reports of the governing bodies of the UN system on progress made towards sustainable and environmentally sound development, 54/ the Secretary-General's report on the implementation of GA resolutions 42/186 and 42/187 55/ and, lastly, the report of the Governing Council of UNEP 56/.

#### GENERAL ASSEMBLY

71. The General Assembly adopted an unprecedented number of resolutions dealing with the environment during its forty-fourth session from 19 September to 29 December 1989. Only those of most importance for the Governing Council and UNEP are summarized here.

#### Resolution 44/172 - Plan of Action to Combat Desertification (PACD)

72. Part A of this resolution, deals with the implementation of PACD generally. Having stated, inter alia, its awareness that the negative effects of the international economic environment impeded the affected developing countries in their efforts to undertake the struggle against desertification, for which they bore primary responsibility, the Assembly took note of the report of the Secretary-General on the implementation of General Assembly resolutions 42/189 A, B and C 57/ and of the

relevant section of the report of the Governing Council and expressed its deep concern about the inadequacy of financial resources for the implementation of PACD. It therefore urged Governments, as well as the organizations of the UN system and other intergovernmental bodies to increase and intensify their efforts to combat desertification and to accord the highest priority to the recommendations in PACD.

73. The Assembly invited the Executive Director to consult the principal organizations, private foundations, individuals and the major media enterprises that finance or promote environmental protection activities to draw their attention to the compelling need to consider desertification control on an equal footing with other current environmental issues. It also invited the 1992 Conference to accord high priority to desertification control and UNEP's Governing Council to contribute substantially to this discussion, inter alia, by undertaking a general evaluation on the progress achieved in implementing PACD.

74. In addition, the Assembly asked that the Secretary-General, in consultation with the Executive Director, submit to the Conference, through its Preparatory Committee, a report containing expert studies on seven topics, among others, concerning various aspects of financial support for implementation of the PACD.

75. The Assembly decided to close the Special Account to finance the implementation of PACD. It also decided that the Consultative Group for Desertification (DESCON) would meet every year until the 1992 Conference and every two years thereafter, and reaffirmed its mandate as contained in resolutions 32/172 (1977) and 39/168 (1984). In addition, the Assembly called upon DESCON, in co-operation with the Executive Director, to contribute to enhancing awareness of environmental issues and to intensify its efforts to mobilize additional resources, to exchange information on scientific research, national programmes and the implementation of PACD, as well as to give its opinions on the actions to be taken in fighting desertification. The Assembly also urged the Governments of countries affected by desertification to accord high priority in their national development plans to medium-term and long-term strategies and programmes for desertification control.

76. Finally, the Assembly requested the Secretary-General, together with the Executive Director and the Administrator of

UNDP, to submit a report to it at its 46th session, through ECOSOC, on this resolution and to ensure that it was submitted to the Preparatory Committee for the 1992 Conference.

77. Part B of resolution 44/172 concerns the implementation of PACD in the Sudano-Sahelian region. Taking note with appreciation of the report of the Administrator of UNDP on the activities of UNSO, 58/ as well as the relevant section of the report of UNEP's Governing Council, the Assembly stressed with deep concern that desertification in the countries of the region had worsened and spread to other areas of Africa; that the chronic insufficiency of financial resources continued to pose obstacles to desertification control; and that the battle against desertification required financial and technical resources beyond the means of the affected countries.

78. Urging the affected countries that had not already done so to include projects to combat desertification and drought in their national development plans and to accord these high priority, the Assembly also urged these countries to use all appropriate mechanisms, to mobilize resources for the implementation of programmes to combat desertification, and appealed to donor countries to provide substantial additional resources for financing such programmes. The Assembly noted with satisfaction, too, that UNSO had endorsed the concept of sustainable development. It urged UNSO to assist the countries of the region with their preparations for the 1992 Conference and the resulting follow-up activities.

79. The Assembly took note with appreciation of the interest displayed by Paris economic summit of July 1989 in aspects of the struggle against desertification. It also expressed its gratitude to those Governments that contribute to the United Nations Trust Fund for Sudano-Sahelian activities, and renewed its urgent appeal to all members of the donor community to contribute substantially to the Fund.

80. Lastly, the Assembly requested the Executive Director and the Administrator of UNDP to strengthen their common undertaking to support UNSO and invited UNSO itself to intensify its efforts to mobilize additional resources and to continue to support COMIDES.

Resolution 44/206 - Possible adverse effects of sea-level rise on islands and coastal areas, particularly low-lying coastal areas

81. The Assembly welcomed the growing world-wide attention being given to these potentially serious impacts, having noted the ongoing work on the subject within the UN system, in particular within UNEP, WMO and IPCC, and in this connection, Governing Council decision 15/36. The Assembly urged the international community to provide effective and timely support to countries affected by sea-level rise, particularly developing countries. It requested the Secretary-General to invite UNEP and WMO and, through them, IPCC to take account in their work of the special situation of islands and coastal areas, especially low-lying coastal areas. It also recommended that the vulnerability of affected countries and their marine ecosystems to sea-level rise be considered during discussions of a draft framework convention on climate, as well as within the framework of the 1992 Conference and its preparatory process. Finally, the Assembly asked the Secretary-General to report to it at its 46th session on the implementation of this resolution through ECOSOC and the Governing Council.

Resolution 44/207 - Protection of global climate for present and future generations of mankind

82. In this resolution, the Assembly followed up its 1988 initiative (resolution 43/53) in which it recognized climate change as a common concern of mankind and recalled Governing Council decision 15/36 on global climate change. It noted a great variety of declarations, messages, decisions and conclusions reached by intergovernmental, regional and other international bodies within and outside the UN system during the course of 1989 on the subject of climate change.

83. Emphasizing the need to address with urgency the question of climate change, the Assembly recommended that Governments continue and, wherever possible, increase their activities in support of the World Climate Programme and the International Geosphere-Biosphere Programme, and, further, recommended that the international community support efforts by developing countries to participate in these scientific activities. The Assembly urged Governments and intergovernmental organizations to collaborate in making every possible effort to limit, reduce and prevent activities that could adversely affect climate and called on NGOs, industry and other productive sectors to play their due role.

84. Reaffirming the sovereign right of States to exploit their own resources, as well as their responsibility to ensure that activities within their jurisdiction and control did not damage the environment of other States or areas beyond the limits of national jurisdiction, the Assembly also reaffirmed the need for States to play their due role in preserving the global and regional environment. In addition, it reaffirmed that the UN system, through the Assembly itself, because of its universal character, was the appropriate forum for concerted political action on global environmental problems.

85. Welcoming the joint efforts of WMO and UNEP in providing support to the urgent work being undertaken by IPCC and its three Working Groups, the Assembly invited all Governments, as well as IGOs and NGOs, to support the Panel's work and to participate actively in it, and welcomed the establishment of the IPCC Trust Fund and the contributions made to it. The Assembly also urged the Panel to take the necessary steps to ensure the scientific and policy participation of developing countries in its work and called upon the international community to consider contributions generously to the Trust Fund.

86. The Assembly supported the request made by the UNEP Governing Council in its decision 15/36 that the Executive Director, in co-operation with the Secretary-General of WMO, begin preparations for negotiations on a framework convention on climate, taking into account the work of IPCC and its interim report. It recommended that negotiations begin as soon as possible after the adoption of that report and, further, that the Assembly take a decision early during its next session recommending ways, means, and modalities for pursuing these negotiations, taking into account the work of the Preparatory Committee for the 1992 Conference.

87. In addition, the Assembly urged Governments, IGOs, NGOs and scientific institutions as a matter of urgency to collaborate in efforts to prepare a framework convention on climate and associated protocols and recommended that Governments and competent IGOs consider, while awaiting the outcome of the negotiations, the range of possible options for averting the potentially damaging impacts of climate change and for removing the causes of the phenomenon. Moreover, the Assembly encouraged Governments and relevant IGOs to further the development of international funding mechanisms. Addressing the problem of technology transfer, the Assembly decided that

the concept of assured access to and transfer of environmentally sound technologies for developing countries on favourable terms and its relation to intellectual property rights should be explored in the context of the elaboration of a framework convention on climate.

88. Finally, the Assembly requested the Secretary-General to continue his support for the formulation and implementation of strategies to cope with climate change, to bring this resolution to the attention of all Governments, as well as IGOs, NGOs in consultative status with ECOSOC and scientific institutions with expertise in matters concerning climate, to report to it at its 45th session on the progress achieved in implementing this resolution and decided to include this item in the provisional agenda of that session.

Resolution 44/224 - International co-operation in the monitoring, assessment and anticipation of environmental threats and in assistance in cases of environmental emergency

89. This resolution deals with the same subject as the Governing Council in its decision 15/10. The Assembly noted with appreciation the work undertaken by UNEP to develop criteria for the identification of environmental threats at the national, regional and global levels; affirmed the need for closer co-operation among UNEP, UNDRO, WHO, WMO and other competent UN bodies, bearing in mind UNEP's co-ordinating role on environmental matters within the UN system; and took note of the fact that other proposals had been made for strengthening the system's effectiveness in monitoring, assessing and anticipating environmental threats and rendering timely assistance in environmental emergencies.

90. The Assembly underlined the importance of broader participation in Earthwatch, so as to strengthen UNEP's capacity to make authoritative assessments, anticipate environmental degradation, and issue early warnings to the international community. It also requested the Secretary-General, assisted by the Executive Director, to prepare a report on the basis of the views of Member States and existing national and international legislation in this field, containing proposals and recommendations on possible ways and means to strengthen UN capacity in various areas relating to monitoring, assessing and anticipating environmental threats, defining criteria for determining environmental degradation and issuing early warnings to the international community when such degradation becomes imminent.

91. The Assembly requested the Secretary-General to submit this report for consideration during the preparatory process for the UN Conference on Environment and Development and invited the Governing Council to consider the report as well and to present its views thereon to the Assembly at its 46th session through ECOSOC.

Resolution 44/225 - Large-scale pelagic driftnet fishing and its impact on the living marine resources of the world's oceans and seas

92. In this resolution, the Assembly recognized that more than 1000 fishing vessels used large-scale pelagic driftnets in the Pacific, Atlantic and Indian Oceans, as well as in other areas of the high seas, a fishing method that was widely considered a threat to the effective conservation of living marine resources. Moreover, recalling the responsibility of all members of the international community, in accordance with the relevant articles of the Convention on the Law of the Sea, to ensure the conservation and management of living marine resources and the protection and preservation of the living marine environment within their exclusive economic zones and noting the adoption by the South Pacific States and territories of the Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific in November 1989, the Assembly called upon all members of the international community to strengthen their co-operation in the conservation and management of living marine resources. It called upon all those involved in large-scale pelagic driftnet fishing to co-operate fully with the international community, in the enhanced collection and sharing of statistically sound scientific data.

93. The Assembly went on to recommend that all interested members of the international community should continue to consider the best available scientific data on the impacts of those fishing methods and no later than 30 June 1991 review the data and agree upon further co-operative regulation and monitoring methods, as needed. Further, the Assembly recommended that all members of the international community agree to (a) moratoria on all large-scale pelagic driftnet fishing on the high seas by 30 June 1992 with certain provisos for exceptions; (b) immediate action to reduce progressively large-scale pelagic driftnet fishing activities in the South Pacific region leading to the cessation of such activities no later than 1 January 1991; and (c) immediate cessation to further expansion of large-scale fishing of this type on the high seas of the North Pacific and all the other high seas outside the Pacific Ocean.

94. The Assembly encouraged coastal countries that had exclusive economic zones adjacent to the high seas to take appropriate measures and to co-operate in collecting and submitting scientific information on driftnet fishing in their own exclusive economic zones and requested specialized agencies, notably FAO and other appropriate UN bodies, as well as the various regional and subregional fisheries organizations, to study urgently large-scale pelagic driftnet fishing and its impact on living marine resources and to report their views to the Secretary-General.

95. Lastly, the Assembly requested the Secretary-General to bring this resolution to the attention of all members of the international community, IGOs, NGOs in consultative status with ECOSOC, and well-established scientific institutions with expertise in relation to living marine resources, and to submit to it at its 45th session a report on the implementation of the resolution.

Resolution 44/226 - Traffic in and disposal, control and transboundary movements of toxic and dangerous products and wastes

96. In the preamble of this three-part resolution, the Assembly referred, inter alia, to a number of related resolutions it had adopted during prior sessions, the reports of the Secretary-General on products harmful to health and the environment 59/ and illegal traffic in toxic products and wastes 60/ as well as Governing Council decisions 15/28 and 15/30 and took note of the conclusions of the Basel Convention.

97. In the first part of the resolution which concerns traffic in toxic and dangerous products and wastes, the Assembly requested each regional commission, to contribute to the prevention of such illegal traffic by monitoring it and making regional assessments of its magnitude and environmental and health implications on a continuing basis, in co-operation with UNEP as well as that of a number of other UN bodies fostered or created by UNEP. The regional commissions were asked to report to ECOSOC at its second regular session as from 1990.

98. The Assembly also requested the regional commissions to interact among themselves and in co-operation with UNEP with a view to maintaining efficient and co-ordinated monitoring and assessment of the illegal traffic in toxic and dangerous products and wastes and requested ECOSOC to submit

recommendations to the Assembly on the findings and conclusions of the regional commissions. To these ends, the Assembly called upon all countries to co-operate with their respective regional commissions.

99. The second part of the resolution deals with the protection against products harmful to health and the environment. Having expressed its appreciation to the Secretary-General for his report on this subject containing the Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments, prepared in co-operation among the UN, WHO and UNEP/IRPTC, the Assembly noted the need to utilize also the work being done by other bodies of the UN system and under international agreements and conventions in related areas. The Assembly expressed appreciation for the growing co-operation of Governments in preparing the Consolidated List, and urged all Governments that had not yet done so to provide the necessary information for inclusion in its updated versions.

100. The Assembly requested the Secretary-General to ensure the List's publication in English, French and Spanish and to undertake a special effort to ensure effective and wider dissemination of the List in all appropriate circles. Further, the Assembly requested that he consider ways and means for more effective involvement of NGOs in promoting the dissemination and utilization of the List. Finally, the Secretary-General was requested to make specific suggestions on ways and means of providing technical co-operation to countries to create and strengthen their capacity to utilize the consolidated list, and to study all the pending issues with a focus on improving the usefulness of the Consolidated List.

101. The third part of the resolution deals with the control of transboundary movements of hazardous wastes and their disposal. The Assembly recognized the necessity of developing rules of international law, as early as practicable, on liability and compensation for damage resulting from the transboundary movement of such wastes. It requested the Executive Director to establish an ad hoc working group of legal and technical experts to develop, as early as practicable, elements that might be included in a protocol on liability and compensation for damage resulting from the transboundary movement and disposal of hazardous wastes, and to report to the preparatory committee of the 1992 Conference and to UNEP's Governing Council.

102. The Assembly invited the Executive Director and the Secretary-General of IMO to review the existing rules, regulations and practices with respect to the disposal of hazardous wastes at sea in order to harmonize the provisions of the conventions that deal with this subject. Finally, the Assembly asked the Secretary-General, in co-operation with the Executive Director, to report to it at its 46th session, through ECOSOC, on the progress achieved in implementing the provisions of the Basel Convention and of this resolution.

Resolution 44/227 - Implementation of General Assembly resolution 42/186 and 42/187

103. Having taken note of the Secretary-General's report on the implementation of these resolutions, 61/ the Assembly noted with appreciation the efforts made by Governments, intergovernmental and non-governmental organizations to promote sustainable and environmentally sound development in all countries. But it expressed concern at the extent of what remained to be done to translate the increased understanding of the need for sustainable and environmentally sound development into concrete action in all countries.

104. The Assembly endorsed the Governing Council's views and suggestions expressed at its 15th session on the implementation of resolutions 42/186 and 42/187 and regarded Governing Council decision 15/2 as a positive step towards a better understanding of the concept of sustainable and environmentally sound development and of the implementation of the concept for all countries. It therefore invited Governments and the governing bodies of the members of the UN family, as well as other intergovernmental and non-governmental organizations, to take these views and suggestions into account in their further efforts in this respect. The Assembly also noted with satisfaction the regional activities in this field and considered that the regional follow-up conferences should contribute to a better understanding and a more concrete meaning of the concept of sustainable and environmentally sound development.

105. The Assembly invited Governments and the governing bodies of the members of the UN family as well as other intergovernmental and non-governmental organizations to intensify further their efforts towards promoting and achieving sustainable and environmentally sound development and noted with appreciation the Secretary-General's efforts to review, co-ordinate and strengthen the activities of the UN system for realizing this central concept.

106. Further, the Assembly noted that serious environmental problems were arising for all countries and that those problems had to be addressed progressively through preventive measures at their sources. It reaffirmed that there was a direct relationship between environment and development and that as environmental issues were closely intertwined with development policies and practices, environmental goals and actions needed to be defined in relation to development objectives and policies. Further, it noted that the critical objectives for environment and development policies that followed from the need for sustainable and environmentally sound development had to include various specific measures linking environment and economic growth in all fields.

107. The Assembly stressed that sustainable and environmentally sound development required changes in the unsustainable pattern of production and consumption, particularly in industrialized countries, and the development of environmentally sound technologies. In this context the Assembly also brought up the question of access to and transfer of such technologies.

108. Again, the Assembly reaffirmed the need to provide new and additional financial resources to support developing countries and the need for developed countries and the relevant organs, organizations and bodies of the UN system to strengthen technical co-operation with the developing countries. It also stressed the need for new and additional resources for measures aimed at solving major environmental problems of global concern. In addition, reaffirming once more the sovereign right of States to exploit their own resources, the Assembly reaffirmed as well the responsibility of States to ensure that activities within their jurisdiction or control did not cause damage to the environment of other States.

109. Looking towards the 1992 Conference, the Assembly invited the Preparatory Committee to take duly into account all recommendations pertaining to the concept of sustainable and environmentally sound development and the views and suggestions expressed by the Governing Council of UNEP and other members of the UN family on these matters. It requested the Secretary-General to prepare a progress report on this resolution for submission to the Preparatory Committee and for further submission to the Assembly at its 46th session through the Governing Council and ECOSOC and a new consolidated report on the subject for submission to the 1992 Conference and to the Assembly at its 47th session through the Governing Council and ECOSOC.

Resolution 44/228 - United Nations Conference on Environment and Development 1992

110. This resolution is divided into two parts, the first devoted largely to the substance of the Conference, the second to its preparation. In the first section, the Assembly decided to convene a UN conference on environment and development of two weeks duration and at the highest possible level of participation to coincide with World Environment Day, 5 June 1992, and accepted with deep appreciation the generous offer of the Government of Brazil to host the Conference. The Conference, it affirmed, should elaborate strategies and measures to halt and reverse the effect of environmental degradation in the context of national and international efforts to promote sustainable and environmentally sound development.

111. The Assembly then reiterated a wide variety of principles enunciated in resolutions it had adopted at earlier sessions, as well as in decisions of the Governing Council relating to the protection and enhancement of the environment and the promotion of economic growth in developing countries.

112. In light of all these principles, the Assembly affirmed nine environmental issues which were among those of major concern in maintaining the quality of the earth's environment and especially for achieving environmentally sound and sustainable development in all countries. These issues were already raised by the Governing Council in the annex to its decision 15/3.

113. Emphasizing the need for strengthening international co-operation for the management of the environment as well as the need to explore the issue of benefits derived from activities related to the protection of its biological diversity, the Assembly reaffirmed the need to strengthen international co-operation in research development and utilization of environmentally sound technologies. The Assembly therefore decided that the Conference, in addressing environmental issues in the developmental context, should have 23 objectives ranging from a review of the state of the environment and changes that have occurred since 1972, over measures to provide additional financing, transfer of technology, elaboration of specific strategies at the national, regional and international levels, including new legal instruments to a review of the institutional framework and the capacity of the UN system to assist in environmental emergencies and potential disputes.

114. Turning to the preparation of the Conference in the second part of resolution 44/228, the Assembly decided to establish a Preparatory Committee of the General Assembly open to all States Members of the United Nations or of the Specialized agencies. The Preparatory Committee was to hold an organizational session of two week's duration in March 1990, and a final session, both at the UN Headquarters in New York, as well as three additional substantive sessions - one in Nairobi and thereafter two in Geneva - whose timing and duration would be determined at the organizational session. At that session, too, the Preparatory Committee would elect the Chairman and other members of its Bureau with due regard to equitable geographic representation. The host country of the Conference, Brazil, was to be ex officio a member of the Bureau.

115. The Assembly also requested the Secretary-General to establish an appropriate ad hoc Secretariat in Geneva with a unit in New York and one in Nairobi. It decided, too, that the ad hoc secretariat would be headed by a Secretary-General of the Conference to be appointed by the Secretary-General of the UN.

116. In addition, it requested the Secretary-General to prepare a report for the organizational session of the Preparatory Committee containing recommendations concerning an adequate preparatory process. The Assembly also set out the major tasks of the Preparatory Committee.

117. The Assembly requested UNEP as the main organ for environment and the organs, organizations and programmes of the UN system, as well as relevant intergovernmental organizations, to contribute fully to the preparations of the Conference. It also asked the Secretary-General to ensure the co-ordination of contributions from the UN system, through the Administrative Committee on Co-ordination. It invited all States to participate actively in the preparations for the Conference. It also requested relevant NGOs in consultative status with ECOSOC to contribute to the Conference, as appropriate. In addition, the Assembly stressed the importance of holding regional conferences on environment and development and recommended that the results of such conferences be introduced into the preparatory process for the 1992 Conference.

118. The Assembly decided that the preparatory process and the Conference itself should be funded through the regular UN budget. It also decided to establish a voluntary fund for

supporting developing countries, in particular the least developed among them, to participate fully and effectively in the Conference and in its preparatory process and invited Governments to contribute to this fund.

119. Finally, the Assembly requested the Chairman of the Preparatory Committee to report to it at its 45th and 46th sessions on the Committee's progress and decided to include in the provisional agendas of its next two sessions an item entitled "United Nations Conference on Environment and Development".

Resolution 44/229 - International co-operation in the field of the environment

120. In this "omnibus" resolution, the Assembly took up most of the Governing Council decisions and included concerns expressed by the Governing Council, ECOSOC and the Assembly itself. In particular it stressed the need for new and additional financial resources, the relationship between the foreign debt and the ability of developing countries to strengthen their capacity to address the critical environmental issues, changes in existing production and consumption patterns and the development of environmentally sound technologies required by sustainable and environmentally sound development and favourable access to such technologies for developing countries.

121. It endorsed the work of UNEP, welcomed the report of the Governing Council on the work of its 15th session, and noted its decisions with appreciation. It supported further strengthening of UNEP's role as the central catalyzing, co-ordinating and stimulating body in the field of the environment within the UN system and welcomed the steps taken by the Council in its decision 15/1 to improve its effectiveness and efficiency. Moreover, the Assembly endorsed the annual minimum target of \$100 million in contributions by 1992.

122. The Assembly again reaffirmed that the appropriate forum for concerted political action on global environmental problems was the UN system, through the Assembly itself, because of its universal character. Further, it considered that the structure and responsiveness of the system to deal with major environmental issues in an integrated, coherent and effective way should be reviewed in order to strengthen its capacity in this regard.

123. The Assembly took note of Council decision 15/4, and supported the decision that the Council should hold a special three-day session at the same location and in conjunction with the first substantive session of the Preparatory Committee for the UN Conference on environment and development. The Assembly agreed with the Council that this special session should deal with the elaboration of priority environmental issues and the process of making and implementing decisions on these questions, in particular ways and means of enhancing UNEP's role within the UN system in addressing them.

124. The Assembly took specific note of many other decisions of the Governing Council, in particular on environmental areas of concentration for the international community and the issues to which UNEP should give special attention, the views and suggestions of the Council on the implementation of GA resolutions 42/186 and 42/187, the Council's contribution to the preparation of an international development strategy for the Fourth UN Development Decade, and the proposed establishment of a UN centre for urgent environmental assistance.

125. The Assembly also concurred with decision 15/14 on the clearing-house function; supported decision 15/23 on desertification, took note of the decision 15/24 on sustainable agriculture and called upon the Council to pay special attention to its implementation; and welcomed decision 15/34 on the biological diversity of the planet.

126. On the issue of climate change, the Assembly, like the Council, urged IPCC to take the necessary steps to ensure the scientific and policy participation of developing countries in its work and called on the international community, particularly the developed countries, to consider contributing generously to the Panel's trust fund. The Assembly also supported the request made by the Council in its decision 15/36, that the Executive Director, in co-operation with the Secretary-General of WMO, begin preparing for negotiations on a framework convention on climate. It recommended that such negotiations begin as soon as possible after the IPCC interim report and that the Assembly, early in its 45th session, recommend ways and means and modalities for pursuing these negotiations further, taking into account the work of the Preparatory Committee for the 1992 Conference.

127. In respect of other UNEP work, the Assembly noted with satisfaction the progress made on the protection of the ozone layer, urged all States to co-operate with the Executive Director to strengthen the Montreal Protocol in the light of the Helsinki Declaration, and emphasized the importance of taking into account the special needs and requirements of developing countries and developing appropriate funding mechanisms. It also noted the adoption of the Basel Convention, calling upon all States, to consider signing this instrument without prejudice to the final position to be adopted by regional organizations in this regard and, to strengthen their co-operation in problem areas within the scope of the Convention.

128. Finally, the Assembly expressed its satisfaction at the impetus given to addressing environmental concerns through meetings at the regional level and called on UNEP and other relevant organizations to continue to play an effective role in this regard.

## NOTES

- 1 UNEP/GC.15/5 paras. 5-10.
- 2 Decision 15/46.
- 3 UNEP/GC.15/5/Supplement 1, annex.
- 4 UNEP/GC.14/4/Add.6, Annex II.
- 5 See UNEP/GC.15/Inf.7.
- 6 General Assembly resolution 42/186, annex.
- 7 UNEP/GC.15/8/Add.3, paras. 14-22.
- 8 Ibid., paras. 5-11.
- 9 UNEP/GC.15/7/Add.1 and 2.
- 10 UNEP/GC.15/7/Add.3.
- 11 UNEP/GC.15/12; chap. V, paras. 12-13.
- 12 UNEP/GC.15/7/Add.5.
- 13 UNEP/GC.15/5/Add.3.
- 14 Report of the African Ministerial Conference on the Environment on the Work of its Third Session, Nairobi, 10-12 May 1989 (UNEP/AMCEN.3/2).
- 15 See also Final Report of the Sixth Ministerial Meeting on the Environment in Latin America and the Caribbean (UNEP/LAC-IG.VI/6).
- 16 Ibid., annex IV.
- 17 UNEP/GC.15/8/Add.1.
- 18 JIU/REP/88/5 and UNEP/GC.15/L.1.
- 19 UNEP/GC.15/9/Add.1.
- 20 UNEP/GCSS.I/7/Add.1.

- 21 UNEP/GC.15/9/Add.6, annex.
- 22 Ibid., section 7.
- 23 Second International Conference on the Protection of the North Sea, London, 24-25 November 1987, Ministerial Declaration, section XVI, para.1.
- 24 UNEP/GC.15/9/Add.2/Supplement 3, paras. 6-11.
- 25 Ibid., Supplement 3, appendix.
- 26 UNEP/GC.15/9/Add.5.
- 27 UNEP/GC.15/9/Add.2, paras. 1-9.
- 28 See "Report of the Conference of Parties on the work of its first meeting" (UNEP/OzL.Conv. 1/5).
- 29 See "Report of the Parties to the Montreal Protocol on the work of their first meeting" (UNEP/OzL.Pro.1/5).
- 30 UNEP/OzL.Pro.1/5, appendix I.
- 31 Report of the First Session of the Intergovernmental Panel on Climate Change (World Meteorological Organization/United Nations Environment Programme World Climate Programme Publications Series, No. IPCC-1/TD-No. 267, paras. 3.12 and 4.3.
- 32 UNEP/GC.15/9/Add.2 and Corr.1, para. 21.
- 33 UNEP/GC.14/17, annex III.
- 34 Official Records of the General Assembly, Forty-third Session, Supplement No.5 F (A/43/5/Add.6).
- 35 UNEP/GC.15/L.4, para.2.
- 36 UNEP/GC.15/L.4.
- 37 A/43/674, para. 59.
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- 39 UNEP/GC/15/10/Add.2 and Corr.1, tables 4 and 6.

- 40 Ibid.
- 41 Ibid., paras. 18 (a) and (b).
- 42 ECOSOC Resolution 1988/72.
- 43 Report of the United Nations Water Conferences, Mar del Plata, 14-15 March 1987 (United Nations publication, Sales No. E.77.II.A.12), chap. I.
- 44 E/C.7/1989/6.
- 45 E/C.7/1989/2.
- 46 E/C.10/1989/12.
- 47 "Milan Plan of Action", Seventh United Nations Congress on the Prevention of Crime and the Treatment of Offenders, Milan, 26 August - 6 September 1985: Report prepared by the Secretariat (United Nations publication, Sales No. E.86.IV.1), chap. I, sect. A.
- 48 E/AC.57/1988/16.
- 49 A/44/332-E/1989/103, annex.
- 50 A/44/351-E/1989/122.
- 51 DP/1989/50.
- 52 A/44/276-E/1989/78.
- 53 A/44/349-E - E/1989/102, annex.
- 54 A/44/339 - E/1989/119.
- 55 A/44/350 - E/1989/99.
- 56 Official Records of the General Assembly, Forty-fourth Session, Supplement No. 25 (A/44/25).
- 57 A/44/351 - E/1989/122.
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186

59 A/44/276 - E/1989/78.

60 A/44/362 and Corr.1.

61 A/44/350.

## **Chapter V**

### **FINANCIAL AND ADMINISTRATIVE AFFAIRS**

**The Funding of the UNEP Secretariat and its programmes**

**Management of Trust Fund**

**Personnel**

## FINANCIAL AND ADMINISTRATIVE AFFAIRS

### I. THE FUNDING OF THE UNEP SECRETARIAT AND ITS PROGRAMMES

1. In dealing with the finances of the organization, previous issues of the Annual Report of the Executive Director have concentrated on the Environment Fund. However, UNEP's funding has grown more complex since its establishment and sources of funding other than the Environment Fund have gained importance, although the Fund is still of critical importance to the organization. This chapter deals with all the major sources of funding used by UNEP in 1989. In the section on use of resources, there is also an analysis of changes in funding since 1972.

#### A. Resources available in 1989

2. UNEP receives funding from four sources: the regular budget of the United Nations, the Environment Fund, trust funds and counterpart contributions. Table 1 below sets out the total resources available to UNEP during 1989 against each of these sources of funds.

Table 1

Resources available in 1989 by source of funding  
(expressed in millions of US dollars)

|                                                                    | Regular<br>Budget<br>(CC) | Environment Fund<br>(CC) | Fund<br>(NCC) | Total  | Trust<br>Funds<br>(CC) | Counterpart<br>Contributions<br>(CC+NCC) | Total<br>(CC+NCC) |
|--------------------------------------------------------------------|---------------------------|--------------------------|---------------|--------|------------------------|------------------------------------------|-------------------|
| Balance brought forward<br>from 1988 (including<br>unpaid pledges) | -                         | 17.75                    | 11.68         | 29.43  | 16.08                  | 2.32                                     | 47.83             |
| Less unpaid pledges for<br>1988 and prior years                    | -                         | (1.92)                   | (0.03)        | (1.95) | (7.49)                 | (0.79)                                   | (10.23)           |
| Contributions received<br>in 1989                                  | 6.05*                     | 33.80                    | 4.78          | 38.58  | 8.71                   | 4.16                                     | 57.50             |
| Other income                                                       | -                         | 2.33                     | 0.34          | 2.67   | 1.18                   | 0.26                                     | 4.11              |
| Total resources available                                          | 6.05                      | 51.96                    | 16.77         | 68.73  | 18.48                  | 5.95                                     | 99.21             |

\* As represented by the allotment of funds received from UN Headquarters, New York.

3. The regular budget and trust funds operate in convertible currencies (CC) only, whereas contributions to the Environment Fund and counterpart contributions can in certain circumstances, be made in both convertible and non-convertible currencies (NCC). Table 1 differentiates between CC and NCC in the case of the Environment Fund; for counterpart contributions no differentiation is made.

4. Table 2 below sets out the annual contributions to the Environment Fund since 1972/73. Total contributions increased rapidly from \$11.83 million in 1972/73 to \$32.13 million in 1979. Contributions declined and remained within a narrow band around \$30 million through most of the 1980's: the 1979 level of contributions was not exceeded until 1988 when contributions reached \$34.57 million. The Governing Council at its fifteenth session established a target for contributions to the Fund of \$100 million by 1992, which requires that all contributing countries increase their individual contributions at a cumulative rate of more than 35 per cent per annum from the 1989 level for the following three years.

Table 2

Contributions to the Environment Fund, 1972-1989  
(millions of US dollars)

|           | CC    | NCC  | Total           |
|-----------|-------|------|-----------------|
| 1972-1973 | 11.67 | 0.16 | 11.83           |
| 1974      | 20.30 | 0.18 | 20.48           |
| 1975      | 10.37 | 3.78 | 14.15           |
| 1976      | 19.71 | 3.73 | 23.43           |
| 1977      | 24.83 | 3.87 | 28.70           |
| 1978      | 25.22 | 4.09 | 29.31           |
| 1979      | 27.65 | 4.48 | 32.13           |
| 1980      | 27.19 | 4.39 | 31.58           |
| 1981      | 26.70 | 4.14 | 30.84           |
| 1982      | 25.62 | 4.06 | 29.68           |
| 1983      | 25.03 | 3.91 | 28.94           |
| 1984      | 25.78 | 3.69 | 29.47           |
| 1985      | 25.33 | 3.33 | 28.67           |
| 1986      | 25.94 | 3.98 | 29.92 <u>a/</u> |
| 1987      | 26.25 | 4.47 | 30.72 <u>a/</u> |
| 1988      | 29.72 | 4.86 | 34.57 <u>a/</u> |
| 1989      | 34.46 | 4.70 | 39.16 <u>a/</u> |

a/ Includes estimated contributions.

5. The timeliness of payment of contributions was a major problem during the early 1980's, with many contributors making payments at the end or even after the end of the year for which they were due. As can be seen from Table 3 below, the situation has recently improved with the majority of contributions now being paid during the first half of the year, and only relatively small proportions being paid after the end of the year.

Table 3

| <u>Rate of payment of contributions to the</u><br><u>Environment Fund, 1986-1989</u><br>(expressed as a percentage of total estimated contributions) |       |       |       |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|
|                                                                                                                                                      | 1986  | 1987  | 1988  | 1989  |
| Paid by 31 March                                                                                                                                     | 12.8  | 18.8  | 33.3  | 10.7  |
| Paid by 30 June                                                                                                                                      | 53.5  | 32.4  | 29.8  | 42.7  |
| Paid by 30 September                                                                                                                                 | 10.5  | 36.9  | 14.4  | 22.8  |
| Paid by 31 December                                                                                                                                  | 17.0  | 9.6   | 17.9  | 21.0  |
| Paid after 31 December                                                                                                                               | 6.2   | 2.3   | 4.6   | 2.8   |
| Total                                                                                                                                                | 100.0 | 100.0 | 100.0 | 100.0 |

6. While it is encouraging that total contributions have increased and are being paid more promptly, there has unfortunately been a decline in the total number of contributors to the Environment Fund. In 1982, a total of 89 countries made a contribution to the Environment Fund, by 1988 this had fallen to 83 and for 1989 only 81 countries are expected to make a contribution. This decline is of concern, but seems more due to the foreign exchange problems of developing country contributors than to a lack of interest in the environment on the part of Governments.

7. The increasing level of unpaid pledges to trust funds, however, is a problem. Each year Governments contribute less than they pledge, leaving greater unpaid pledges for past years. At the beginning of 1989 there were \$7.49 million in outstanding pledges for 1988 and prior years, and by 1 January 1990 this figure had risen to \$7.82 million. This is very large when compared to unpaid pledges to the Environment Fund, which at the beginning of 1990 stood at only \$0.98 million for 1989 and prior years.

8. Total resources of \$99.21 million available to UNEP in 1989 were higher than in any year since UNEP's establishment. Of this total \$68.73 million was available under the Environment Fund, \$18.48 was available under trust funds, \$5.95 million was available under counterpart contributions and \$6.05 million was available under the regular budget.

#### B. Use of resources

#### Overview of expenditures for the years 1972-1989

9. Table 4 below sets out the total expenditures administered by UNEP since its establishment. The Environment Fund is used to finance both the programme and programme support costs budget (PPSC) and the Fund programme and Fund programme reserve activities. In addition, trust funds are used to finance both trust fund programmes and the special account for programme support costs (OTL). The OTL account is financed by an overhead charge on all trust fund programme expenditures. Hence, while there are four basic types of funding, UNEP expends funds through six different accounts. The figure below gives a graphic presentation of the data presented in Table 4.

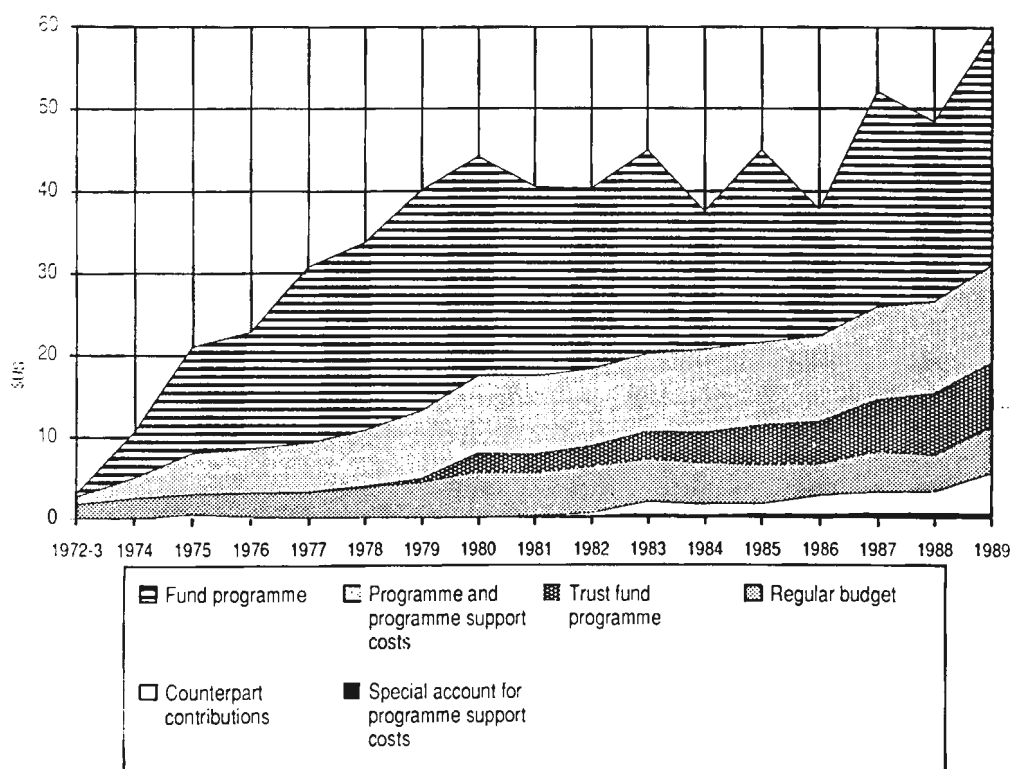
Table 4

#### UNEP Expenditures 1972-1989

(expressed in millions of US dollars and as a percentage of total expenditure)

| Year   | Regular budget |     | Programme and programme support costs |     | Fund programme |     | Trust fund programmes |     | Special account for programme support costs (OTL) |    | Counterpart contributions | Total |
|--------|----------------|-----|---------------------------------------|-----|----------------|-----|-----------------------|-----|---------------------------------------------------|----|---------------------------|-------|
| 1972-3 | 1.75           | 57% | 0.93                                  | 30% | 0.42           | 14% | 0.00                  | 0%  | 0.00                                              | 0% | 0.00                      | 3.09  |
| 1974   | 2.46           | 23% | 2.55                                  | 24% | 5.60           | 52% | 0.00                  | 0%  | 0.00                                              | 0% | 0.06                      | 10.67 |
| 1975   | 2.43           | 12% | 5.08                                  | 24% | 12.94          | 62% | 0.00                  | 0%  | 0.00                                              | 0% | 0.55                      | 21.01 |
| 1976   | 2.89           | 13% | 5.40                                  | 24% | 14.28          | 62% | 0.06                  | 0%  | 0.00                                              | 0% | 0.22                      | 22.85 |
| 1977   | 3.11           | 10% | 6.07                                  | 20% | 21.48          | 70% | 0.07                  | 0%  | 0.00                                              | 0% | 0.07                      | 30.80 |
| 1978   | 3.71           | 11% | 6.95                                  | 21% | 22.90          | 68% | 0.07                  | 0%  | 0.00                                              | 0% | 0.00                      | 33.64 |
| 1979   | 4.33           | 11% | 8.24                                  | 21% | 27.04          | 68% | 0.38                  | 1%  | 0.00                                              | 0% | 0.00                      | 39.98 |
| 1980   | 5.58           | 13% | 9.47                                  | 21% | 26.83          | 61% | 2.26                  | 5%  | 0.11                                              | 0% | 0.00                      | 44.25 |
| 1981   | 5.33           | 13% | 9.57                                  | 24% | 23.21          | 57% | 2.31                  | 6%  | 0.25                                              | 1% | 0.00                      | 40.66 |
| 1982   | 5.75           | 14% | 9.41                                  | 23% | 22.15          | 55% | 2.51                  | 6%  | 0.28                                              | 1% | 0.32                      | 40.41 |
| 1983   | 5.23           | 12% | 9.46                                  | 21% | 24.87          | 55% | 3.42                  | 8%  | 0.54                                              | 1% | 1.50                      | 45.02 |
| 1984   | 5.11           | 14% | 10.18                                 | 27% | 16.90          | 45% | 3.74                  | 10% | 0.36                                              | 1% | 1.33                      | 37.63 |
| 1985   | 4.88           | 11% | 10.10                                 | 22% | 23.53          | 52% | 4.84                  | 11% | 0.56                                              | 1% | 1.20                      | 45.11 |
| 1986   | 3.93           | 10% | 10.45                                 | 28% | 15.51          | 41% | 5.15                  | 14% | 0.48                                              | 1% | 2.36                      | 37.88 |
| 1987   | 5.05           | 10% | 11.34                                 | 22% | 26.32          | 50% | 6.35                  | 12% | 0.71                                              | 1% | 2.48                      | 52.26 |
| 1988   | 4.54           | 9%  | 11.24                                 | 23% | 21.93          | 45% | 7.49                  | 15% | 0.64                                              | 1% | 2.70                      | 48.54 |
| 1989   | 5.63           | 9%  | 11.86                                 | 20% | 28.25          | 48% | 7.92                  | 13% | 0.72                                              | 1% | 4.97                      | 59.34 |

**Figure**  
**UNEP Expenditure 1972-1989**  
(expressed in millions of dollars)



10. Table 4 shows that total UNEP expenditures have increased from \$3.09 million in 1972-3 to \$59.34 million in 1989. This increase has taken place in three major phases. Between 1972 and 1980, total expenditure increased rapidly to \$44.25 million. The early and mid-1980s saw a radically different financial environment during which contributions stagnated and, as a result, so did expenditures. In real terms, after adjustment for inflation, there was a decline in contributions to the Environment Fund, as described in the 1988 Annual Report of the Executive Director. However, 1987 was a turning point: contributions to the Fund broke out of the narrow band of approximately \$30 million and total programme expenditures exceeded \$50 million for the first time. It is interesting to note that 1987 was also the year when global environmental issues impressed themselves on public attention: it was also the year of the Montreal Protocol. By 1989, UNEP's total expenditures exceeded \$59 million.

11. The Environment Fund has always been UNEP's major source of funding. In 1977, the Environment Fund accounted for 90 per cent of UNEP's total expenditures. However, by 1989, even though Environment Fund expenditures were close to \$60 million for the first time, the Fund accounted for only 68 per cent of total expenditures.

12. The programme and programme support costs budget is used to finance part of the secretariat's costs (staff salaries, travel, rent, etc.) There has often been a misconception that programme and programme support costs represent the administrative costs of the Secretariat. But, as the name implies, it includes a considerable amount of programme costs and of programme support costs that cannot be classified as administrative costs in the narrow sense of the word. Administrative costs within PPSC, including rent and equipment for all parts of the organization, totalled 43.42 million in 1989. Nonetheless, the Governing Council has continued to request the Executive Director to aim to keep total PPSC costs within 33 per cent of contributions to the Environment Fund. Since the level of contributions was constant, PPSC expenditures were held relatively constant (between \$9-12 million) throughout the past decade: in 1989, total PPSC costs were equal to 30.3 per cent of estimated contributions. This had undoubtedly been a constraint in the development of environment programmes at a crucial time.

13. Only 10 years ago, trust funds accounted for 1 per cent of UNEP's total expenditures. In 1989, trust funds and the associated special account for programme support costs accounted for over \$8.5 million, making up some 14 per cent of total expenditures. There are two main types of trust funds. General trust funds are those that are established to administer the funding of an action plan, generally as the implementation arm of a convention; and technical assistance trust funds are those that are established to administer funding for a particular activity, whether a single project or a group of related projects. There are also 'other' trust funds that finance, inter alia, supplementary staffing; the Junior Professional Officer trust funds fall under this category.

14. Counterpart contributions are donations, usually from a Government, to a specific project accepted under Rule 204.1 of the Financial Rules of the Fund of UNEP. Expenditures against this source of funding have increased rapidly in recent years; the 1989 expenditures of \$4.97 million were more than four times greater than in 1985. In 1989, counterpart contribution expenditures made up 8 per cent of total expenditures compared with only 1 per cent in 1982.

#### 1989 expenditures

15. UNEP maintains two different types of accounts - project accounts and general accounts. In the case of project accounts, expenditures are reported both on the basis of UNEP's programme areas as set out in the biennial programme budget documents approved by the Governing Council, as well as by object of expenditure. Fund programme activities, trust funds and counterpart contributions are all maintained on a project accounts basis. Table 5 below sets out the 1989 expenditures by programme area for each of these sources of funding.

Table 5

**Expenditures on Fund Programme activities, trust  
funds, and counterpart contributions, 1989**  
(in millions of US dollars)

| Programme/sub-programme                            | Fund<br>Programme | Trust<br>Funds | Counterpart<br>Contributions | Total |
|----------------------------------------------------|-------------------|----------------|------------------------------|-------|
| <b>1. <u>Monitoring and assessment</u></b>         |                   |                |                              |       |
| GEMS                                               | 4.15              | (0.02)         | 0.64                         | 4.77  |
| Atmosphere                                         | 0.64              | -              | 0.01                         | 0.65  |
| Sub-total                                          | 4.79              | (0.02)         | 0.65                         | 5.42  |
| <b>2. <u>Information exchange</u></b>              |                   |                |                              |       |
| IRPTC                                              | 1.86              | -              | 0.17                         | 2.03  |
| INFD TERRA                                         | 1.14              | -              | -                            | 1.14  |
| State of the Environment                           | 0.05              | 0.10           | (0.09)                       | 0.06  |
| Sub-total                                          | 3.05              | 0.10           | 0.08                         | 3.23  |
| <b>3. <u>Oceans</u></b>                            | 3.24              | 4.46           | 0.79                         | 8.49  |
| <b>4. <u>Water</u></b>                             | 1.40              | 0.05           | -                            | 1.45  |
| <b>5. <u>Terrestrial ecosystems management</u></b> |                   |                |                              |       |
| Soils                                              | 0.65              | 0.03           | -                            | 0.68  |
| Forest and other ecosystems                        | 0.36              | 0.30           | -                            | 0.66  |
| Wildlife and protected areas                       | 0.30              | 1.74           | 1.21                         | 3.25  |
| Genetic resources                                  | 0.53              | -              | 0.03                         | 0.56  |
| Lithosphere                                        | 0.31              | 0.04           | -                            | 0.35  |
| Bioproductivity research                           | 0.12              | -              | -                            | 0.12  |
| Sub-total                                          | 2.27              | 2.11           | 1.24                         | 5.62  |
| <b>6. <u>Desertification control</u></b>           | 2.02              | 0.08           | 0.01                         | 2.11  |
| <b>7. <u>Environmental health</u></b>              | 1.02              | -              | -                            | 1.02  |
| <b>8. <u>Peace, security and environment</u></b>   | 0.11              | -              | -                            | 0.11  |
| <b>9. <u>Technology and environment</u></b>        |                   |                |                              |       |
| Energy                                             | 0.25              | 0.04           | 0.27                         | 0.56  |
| Industry and transportation                        | 1.58              | 0.11           | 0.07                         | 1.76  |
| Human settlements                                  | 0.24              | -              | -                            | 0.24  |
| Sub-total                                          | 2.07              | 0.15           | 0.34                         | 2.56  |

|                                                |       |      |      |       |
|------------------------------------------------|-------|------|------|-------|
| 10. <u>Support measures</u>                    |       |      |      |       |
| Environmental Aspects of development           | 0.65  | 0.09 | 0.41 | 1.15  |
| Environmental law and machinery                | 1.20  | 0.18 | 1.17 | 2.55  |
| Environmental education and training           | 1.46  | -    | 0.02 | 1.48  |
| Public information                             | 2.36  | 0.09 | -    | 2.45  |
| Sub-total                                      | 5.67  | 0.36 | 1.60 | 7.63  |
| 11. <u>Regional and technical co-operation</u> | 2.16  | 0.61 | 0.19 | 2.96  |
| Total Fund programme activities                | 27.80 | 7.90 | 4.90 | 40.60 |
| 12. <u>Reserve</u>                             | 0.45  | -    | -    | 0.45  |
| Loss on exchange                               | -     | 0.02 | 0.07 | 0.09  |
| GRAND TOTAL                                    | 28.25 | 7.92 | 4.97 | 41.14 |

16. Expenditures against the regular budget, programme and programme support costs budget, and the special account for programme support costs budget are recorded by organizational area as well as by object of expenditure. Table 6 below sets out the expenditures by organizational area for each source of funding.

Table 6

1989 expenditures against the UN regular budget, programme and programme support costs and the special account for programme support costs  
(in millions of US dollars)

|                                       | UN regular<br>Budget | Programme and<br>programme<br>support costs<br>(PPSC) | Special account<br>for programme<br>support costs<br>(OTL) | Total        |
|---------------------------------------|----------------------|-------------------------------------------------------|------------------------------------------------------------|--------------|
| Policy making organs                  | 1.00                 | -                                                     | -                                                          | 1.00         |
| Executive direction<br>and management | 0.73                 | 1.05                                                  | 0.11                                                       | 1.89         |
| Environment programme                 | 1.17                 | 3.12                                                  | 0.28                                                       | 4.57         |
| Conference services                   | 0.90                 | 0.52                                                  | -                                                          | 1.42         |
| Management of the Fund                | -                    | 0.79                                                  | 0.10                                                       | 0.89         |
| Administration and<br>common services | 0.93                 | 3.46                                                  | 0.23                                                       | 4.62         |
| Regional representation               | 0.53                 | 2.91                                                  | -                                                          | 3.44         |
| UNSCEAR                               | 0.41                 | -                                                     | -                                                          | 0.41         |
| <b>Total</b>                          | <b>5.67</b>          | <b>11.86</b>                                          | <b>0.72</b>                                                | <b>18.25</b> |

17. UNEP projects are implemented by United Nations agencies (co-operating agencies), governments, government institutions and non-governmental organizations (supporting organizations) as well as by UNEP directly (internal projects). The latter includes the five Programme Activity Centres (Oceans and Coastal Areas, Desertification Control, Global Environment Monitoring System, International Register of Potentially Toxic Chemicals and Infoterra) which co-ordinate joint programmes with UN agencies and supporting organizations should therefore be seen as joint programmes rather than projects implemented by UNEP. Other UNEP direct expenditures are concerned with the co-ordination of international programmes being undertaken jointly by the United Nations system and governments, such as the programmes related to climate change and the conservation of biodiversity. Joint training projects with Governments such as those related to the establishment of the Global Resource Information Data base (GRID), toxic chemicals (IRPTC), environmental information (Infoterra) contribute to the proportion of Fund expenditures directed to joint programmes with supporting organizations.

Table 7

Summary of Fund Project expenditures by category  
of implementation

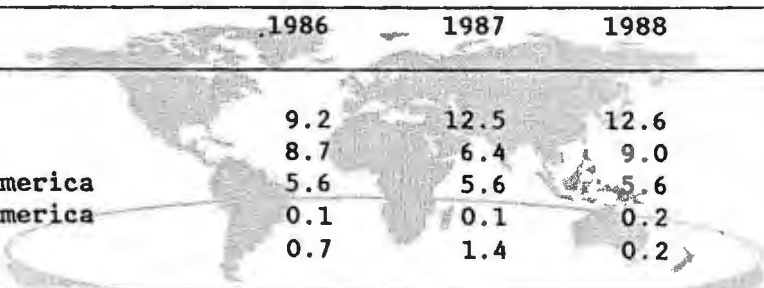
|                                                | 1989<br>US\$      | %            |
|------------------------------------------------|-------------------|--------------|
| Joint Programmes with Co-operating agencies    | 6 397 487         | 22.6         |
| Joint Programmes with supporting organizations | 14 435 063        | 51.1         |
| Project implemented directly by UNEP           | 7 421 742         | 26.3         |
| Total                                          | <u>28 254 292</u> | <u>100.0</u> |

The implementation of Environment Fund Projects

18. A geographical analysis of Fund commitments by region is set out in Table 8 below.

Table 8

**Geographical distribution of Fund expenditures by region**  
**(expressed as a percentage of total expenditure)**



|                | 1986  | 1987  | 1988  | 1989  |
|----------------|-------|-------|-------|-------|
| Africa         | 9.2   | 12.5  | 12.6  | 10.8  |
| Asia           | 8.7   | 6.4   | 9.0   | 6.7   |
| Latin America  | 5.6   | 5.6   | 5.6   | 6.1   |
| North America  | 0.1   | 0.1   | 0.2   | 0.2   |
| Europe         | 0.7   | 1.4   | 0.2   | 1.1   |
| Total regional | 24.3  | 26.0  | 27.6  | 24.9  |
| Interregional  | 7.7   | 7.6   | 5.6   | 4.7   |
| Global         | 68.0  | 66.4  | 66.8  | 70.4  |
| Total          | 100.0 | 100.0 | 100.0 | 100.0 |

**C. The outlook for environment fund resources in 1990-1991**

19. By the end of April 1990, 50 countries had made firm pledges to the Environment Fund for 1990 totalling \$33.22 million. Of these 50 countries, half pledged at a higher level than they had in 1989, in total some \$9.4 million more than in 1989. On the basis of contributions paid or pledged in 1989 and other information received by the Executive Director, it is estimated that a further \$17.65 will be contributed, bringing the 1990 total contributions to approximately \$50.87 million. This is a 30 per cent increase over the \$39.16 million estimated for 1989 and is evidence that Governments are taking seriously the target set by Governing Council at its fifteenth session of \$100 million in annual contributions by 1992.

20. The Executive Director is assuming that Governments will increase their contributions in line with the 1992 target and is therefore estimating total contributions of \$73.16 million for 1991. It should be noted, however, that as at 30 April 1990 only three countries had made a pledge for 1991. The Executive Director's estimate of the resources that will be available in 1990-1991 is shown in Table 9 below.

Table 9

Resources available for the Fund, 1990-1991  
as at 30 April 1990  
 (millions of dollars)

|                                                                                      | Environment Fund |        |         |
|--------------------------------------------------------------------------------------|------------------|--------|---------|
|                                                                                      | (CC)             | (NCC)  | (Total) |
| Balance of Fund carried forward<br>from 1989 (including unpaid pledges<br>1986-1989) | 19.03            | 11.52  | 30.55   |
| Contributions for 1990-1991<br>paid by 31 March 1990                                 | 20.27            | 0.00   | 20.27   |
| Contributions estimated for<br>1990-1991 but not paid by<br>31 March 1990            | 91.46            | 12.30  | 103.76  |
| Other income                                                                         | 5.36             | (0.36) | 5.00    |
| Total resources available                                                            | 136.12           | 23.46  | 159.58  |

D. Use of resources in 1990-1991

21. On the basis of the foregoing estimate of resources available to the Environment Fund, the Executive Director has the authority, subject to the availability of funds, to implement the Fund programme set out in Table 10 for 1990-1991.

Table 10

Fund programme for 1990-1991  
(millions of dollars)

|                                                     | CC      | NCC    | Total  |
|-----------------------------------------------------|---------|--------|--------|
| Programme and programme support costs               | 29.08   | 0.00   | 29.08  |
| Supplementary programme and programme support costs | 3.17    | 0.00   | 3.17   |
| Fund programme activities and reserve activities    | 57.50   | 14.50  | 72.00  |
| Supplementary Fund programme activities             | 35.00   | 0.00   | 35.00  |
| Less underspending under the line above             | (12.65) | (3.29) | 15.94  |
| Total expenditure                                   | 112.10  | 11.20  | 123.30 |
| Balance to be carried forward to 1992               | 24.02   | 12.25  | 36.28  |

22. As at 30 April 1990, the Executive Director had allocated resources to implement the initial programme of \$72 million and, after consulting the Committee of Permanent Representatives, \$7.35 million of the approved supplementary programme of \$35 million. He had also approved an allocation equal to the initially approved appropriation of \$29.08 million for programme and programme support costs. Depending on the availability of funds actually pledged and paid during the biennium, the Executive Director hopes to be able to discuss with the Committee of Permanent Representatives the implementation of additional parts of the supplementary programme of activities and the supplementary provision for programme and programme support costs budget designed to enable UNEP to fill all of its approved posts under this programme rather than operate with 20 per cent of Professional posts vacant, as has been the case in recent years due to the financial constraints described above.

23. The apportionment by sub-programme of the \$79.35 million allocation for Fund activities approved by the Executive Director, as well as the commitments entered into as at 30 April 1990 against these allocations, is set out in Table 11 below.

Table 11

1990-1991 allocations (including supplementary programme  
of \$7.35 million) and commitments as at 30 April 1990  
(millions of US dollars)

|                                        | 1990<br>allocation | 1990<br>commitments | 1991<br>allocation | 1991<br>commitments | 1990-1991<br>allocations | 1990-1991<br>commitments |
|----------------------------------------|--------------------|---------------------|--------------------|---------------------|--------------------------|--------------------------|
| Atmosphere                             | 1.50               | 1.27                | 1.35               | 0.12                | 2.85                     | 1.39                     |
| Water                                  | 2.20               | 0.87                | 1.70               | 0.35                | 3.90                     | 1.22                     |
| Terrestrial ecosystems                 | 6.98               | 4.70                | 5.82               | 2.58                | 12.80                    | 7.28                     |
| Oceans                                 | 3.50               | 1.68                | 3.50               | 0.16                | 7.00                     | 1.84                     |
| Lithosphere                            | 0.30               | 0.17                | 0.30               | 0.01                | 0.60                     | 0.18                     |
| Human settlements<br>and environment   | 0.65               | 0.11                | 0.65               | 0.02                | 1.30                     | 0.13                     |
| Human health and<br>welfare            | 0.75               | 0.34                | 0.75               | 0.17                | 1.50                     | 0.51                     |
| Energy, industry and<br>transportation | 2.15               | 1.83                | 2.15               | 1.71                | 4.30                     | 3.54                     |
| Peace, security and<br>environment     | 0.20               | 0.13                | 0.20               | 0.01                | 0.40                     | 0.14                     |
| Environmental<br>assessment            | 9.40               | 6.42                | 7.40               | 1.93                | 16.80                    | 11.35                    |
| Environmental<br>management measures   | 3.15               | 1.32                | 1.95               | 1.18                | 5.10                     | 2.50                     |
| Environmental<br>awareness             | 5.50               | 3.23                | 4.50               | 2.46                | 10.00                    | 5.69                     |
| Technical and regional<br>co-operation | 5.20               | 2.52                | 3.60               | 1.68                | 8.80                     | 4.20                     |
| Total                                  | 41.48              | 24.59               | 33.87              | 15.38               | 75.35                    | 39.97                    |
| Reserve                                | 2.00               | 1.76                | 2.00               | 0.28                | 4.00                     | 2.04                     |
| Grand Total                            | 43.48              | 26.35               | 35.87              | 15.66               | 79.35                    | 42.01                    |

## II. MANAGEMENT OF TRUST FUNDS

24. Two types of trust funds are administered by UNEP: general trust funds and technical co-operation trust funds. Both types are established under procedures laid down by the United Nations and in accordance with Article V of the General Procedures Governing the Operations of the Fund of the United Nations Environment Programme. General trust funds are established under the approval of the Secretary-General of the United Nations, but the authority to establish technical co-operation trust funds has been delegated by the Secretary-General to the Executive Director.

### A. GENERAL TRUST FUNDS

25. As at 31 December 1989, UNEP administered a total of 32 trust funds, i.e. 13 general trust funds and 19 technical co-operation trust funds, including eight trust funds for the provision of Junior Professional Officers and four trust funds for the provision of senior professional officers. During 1989 alone, six new trust funds were established. A summary of status of each trust fund as at 31 December 1989 follows, including a summary of their financial status in table 12.

#### Regional Trust Fund for the Protection and Development of the Marine Environment and Coastal Areas of Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates

26. This trust fund was established in 1978 in order to support programmes and activities related to the Kuwait Action Plan and the related Regional Convention and Protocol.

27. UNEP continued to provide general support to ROPME in the implementation of its programme. For example, UNEP assisted ROPME in carrying out an in-depth evaluation of the ROPME Programme and in a follow-up of the reorientation of the Programme with refocusing on coastal zone management. UNEP also provided assistance in the finalization of the plan of action for the surveillance, ecological assessment and clearance of war-related pollution, objects, and wrecks in the ROPME Sea Area, as well as in the preparation of a draft regional strategy for coastal zone management and development. At ROPME's request, UNEP identified and recruited consultants to examine and analyse data obtained from ROPME's monitoring programme, provided an expert for a ROPME Workshop on Mass Media and the Environment, furnished public information materials for use and dissemination in the region and supported ROPME with advice on technical matters.

28. As at 31 December 1989, eight countries had acceded to the Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution, and eight States had signed the Protocol concerning Regional Co-operation in Combating Pollution by Oil and other Harmful Substances in Cases of Emergency. The trust fund is financed by direct grants from ROPME in accordance with programme needs. The 1989 expenditures amounted to \$ 76,686.

Table 12

FINANCIAL STATUS OF TRUST FUNDS FOR THE BIENNIUM 1988-1989  
(Expressed in US dollars)

|                                                           | A*                                     | B                     | C                                          | D                                                   | E                                     | F                                                |           |
|-----------------------------------------------------------|----------------------------------------|-----------------------|--------------------------------------------|-----------------------------------------------------|---------------------------------------|--------------------------------------------------|-----------|
|                                                           | Balance available as at 1 January 1988 | Pledges 1988 and 1989 | Total contributions collected in 1988-1989 | Total interest miscellaneous income and on exchange | Outstanding contributions prior years | Balance available as at 31 Dec. 1989 (A+B-D-E-F) |           |
| 1. Kuwait Action Plan                                     | 148 330                                | 50 000                | 50 000                                     | 23 055                                              | 142 906                               | -                                                | 78 479    |
| 2. Mediterranean Action Plan                              | 5 086 826                              | 7 355 472             | 7 019 721                                  | 661 700                                             | 8 098 704                             | 2 652 537                                        | 2 352 757 |
| 3. W and C African Region                                 | 3 169 227                              | -                     | 468 578                                    | 74 604                                              | 170 711                               | 2 445 910                                        | 627 214   |
| 4. Caribbean Trust Fund                                   | 2 731 417                              | 1 144 219             | 1 089 121                                  | 324 277                                             | 1 797 093                             | 804 173                                          | 1 598 647 |
| 5. East Asian Seas                                        | 303 925                                | 189 200               | 220 933                                    | 52 429                                              | 40 886                                | 61 767                                           | 442 901   |
| 6. E.A. Regional Seas                                     | 570 167                                | -                     | 54 400                                     | 18 824                                              | -                                     | 445 208                                          | 143 783   |
| 7. CITES Trust Fund                                       | 476 933                                | 3 320 136             | 2 875 126                                  | 2 831 821                                           | 1 253 607                             | 1 253 607                                        | 43 717    |
| 8. Migratory Species                                      | 330 280                                | 477 961               | 471 109                                    | 61 625                                              | 387 209                               | 151 154                                          | 331 703   |
| 9. Sasakawa Trust Fund                                    | 1 208 403                              | -                     | -                                          | 251 391                                             | 189 937                               | -                                                | 1 269 857 |
| 10. Stamp Conservation                                    | 55 025                                 | -                     | -                                          | 9 195                                               | 24 355                                | -                                                | 39 869    |
| 11. Environmental Training                                | -                                      | -                     | 80 000                                     | 404                                                 | 593                                   | -                                                | (189)     |
| 12. Montreal Protocol                                     | -                                      | -                     | 1 51 106                                   | 1 054                                               | -                                     | -                                                | 1 058     |
| 13. Vienna Convention                                     | -                                      | -                     | 92 839                                     | 704                                                 | -                                     | -                                                | 708       |
| 14. Industrial, Environmental and Raw Material Management | 13 536                                 | 317 955               | 317 955                                    | 30 387                                              | 303 281                               | -                                                | 118 591   |
| 15. Andean Ecosystem Protection                           | 843 394                                | -                     | -                                          | 110 760                                             | 600 284                               | -                                                | 353 870   |
| 16. Environmental Health Hazards                          | 189 613                                | -                     | -                                          | 27 373                                              | 204 216                               | -                                                | 12 170    |
| 17. Clearing House                                        | 2 335                                  | -                     | -                                          | 4 687                                               | -                                     | -                                                | 7 022     |
| 18. Consultancies to Developing Countries                 | 87 351                                 | 152 469               | 152 469                                    | 76 377                                              | 151 543                               | -                                                | 104 654   |
| 19. Experts to SAOCC                                      | 116 350                                | 242 587               | 242 587                                    | 21 891                                              | 225 232                               | -                                                | 155 596   |
| 20. JPOS-Norway                                           | 88 055                                 | 96 326                | 96 326                                     | 18 627                                              | 120 783                               | -                                                | 82 225    |
| 21. JPOS-Japan                                            | 157 884                                | 668 449               | 150 656                                    | 56 623                                              | 681 695                               | -                                                | 201 261   |
| 22. JPOS-Denmark                                          | 22 141                                 | 198 372               | 320 701                                    | 16 138                                              | 246 885                               | -                                                | (10 234)  |
| 23. JPOS-Federal Republic of Germany                      | 145 513                                | 130 900               | 93 600                                     | 26 244                                              | 194 552                               | -                                                | 108 105   |
| 24. JPOS-Sweden                                           | -                                      | 206 267               | -                                          | 6 910                                               | 72 350                                | -                                                | 140 827   |
| 25. JPOS-Netherlands                                      | -                                      | 174 389               | 115 856                                    | 13 110                                              | 103 371                               | -                                                | 84 128    |
| 26. JPOS-Finland                                          | -                                      | 81 966                | -                                          | 5 764                                               | 56 823                                | -                                                | 30 907    |
| 27. Experts to UNEP GNTD                                  | 256 924                                | 295 687               | 26 817                                     | 882 776                                             | 382 776                               | -                                                | 196 652   |
| 28. Environmental Awareness and Machinery                 | -                                      | 222 087               | 222 087                                    | 25 866                                              | 153 989                               | -                                                | 93 964    |
| 29. Policy Response to Climate Change                     | -                                      | 89 653                | 89 653                                     | 3 980                                               | 78 742                                | -                                                | 14 891    |
| 30. Ozone Secretariat-USA                                 | -                                      | 70 329                | 70 329                                     | 1 379                                               | 36 938                                | -                                                | 34 770    |
| 31. Vienna Convention and Montreal Protocol               | -                                      | -                     | 2 176 039                                  | 12 563                                              | -                                     | -                                                | 22 046    |
| 32. Grid Centre-Arendal                                   | -                                      | 70 423                | 70 423                                     | -                                                   | 73 666                                | -                                                | (3 463)   |
| GRAND TOTAL                                               | 16 263 629                             | 15 554 847            | 16 993 299                                 | 2 036 533                                           | 17 371 561                            | 7 814 355                                        | 8 689 093 |

\* Taking into account adjustments to prior years' income/pledges

29. Upon receiving a request from the Executive Secretary of ROPME that the trust fund be extended through 30 June 1991, and following Governing Council decision 15/43 endorsing this extension, UNEP obtained the Secretary-General's approval.

The Trust Fund for the Protection of the Mediterranean Sea Against Pollution

30. This trust fund was established in 1979 in order to support the implementation of programmes and activities for the protection of the Mediterranean Sea against pollution. The fund financed the following activities in 1988-89; first, the preparation of a draft protocol for the protection of the Mediterranean Sea against pollution resulting from exploration and exploitation of the continental shelf and the sea-bed and subsoil; second, the implementation of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources and the Protocol for Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft; third, the protection of the common Mediterranean heritage, which includes the conservation of marine life, protected areas and historical sites; and, fourth, the promotion of environmentally sound management of the Mediterranean coastal zone, which includes analysing the relationship between environment and development, coastal planning and management, and, among other numerous activities, the preparation and publication of a report entitled Futures of the Mediterranean Basin, 2000 - 2025.

31. As at 31 December 1989, the Convention for the Protection of the Mediterranean Sea against Pollution and its related Protocols had been ratified by 16 States, as well as EEC. All these Parties contributed to the trust fund.

32. In 1979, the total contributions paid into the trust fund amounted to \$1.1 million. By 1989, the total had grown to \$3.15 million. The 1979 expenditures amounted to \$321,006, while in 1989, the total expenditures amounted to \$3.9 million. An extension of the trust fund through 31 December 1991 was confirmed by the Sixth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution and its related Protocols, held in Athens from 3 to 6 October 1989, and approved by the Secretary-General after the Governing Council had given conditional approval in its decision 15/43.

The Trust Fund for the Protection and Development of the Marine Environment and Coastal Areas of the West and Central African Region

33. This trust fund was established in 1981 to support the programmes and activities under the Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the West and Central African Region.

34. Regional activities under the Action Plan, however, have been financed largely by the Environment Fund since its adoption in 1981, although the trust fund has contributed part of the cost of the activities related to monitoring pollution in the marine environment of the region.

35. At the time of the second meeting of the Contracting Parties in January 1989, the Convention for Co-operation on the Protection and Development of the Marine and Coastal Environment of the West and Central African Region and its associated Protocol concerning Co-operation in Combating Pollution in Case of Emergency had been signed by 12 countries and ratified by six others.

36. During the initial year, 1982, the total contributions received amounted to \$40,893, while in 1989 a total of \$451,232 was collected leaving total outstanding contributions of \$2.4 million. Delays in payments of the contributions pledged by the Governments concerned have caused problems in the implementation of decisions made at meetings of the Steering Committee and the Contracting Parties. The second meeting of the Contracting Parties decided that the payment of both the arrears and the new contributions would be re-examined, taking into account the conclusions of a working group established to study the problem and recommend possible solutions. No 1989 expenditures on activities were reported.

37. The extension of the trust fund duration through 31 December 1991 has been approved by the Secretary General, following the recommendation of the Second Meeting of the Contracting Parties and the UNEP Governing Council in its decision 15/43.

The Regional Trust Fund for the Implementation of the Action Plan for the Caribbean Environment Programme

38. The trust fund was established in 1981 to support the programmes and activities related to the Action Plan for the Caribbean Environment Programme.

39. During 1989, the trust fund financed projects concerning the following four major areas: first, regional co-ordination, information exchange and institutional development; second, management of coastal and marine resources; third, assessment and control of marine pollution; and fourth, environmental training, education and public awareness. The Regional Co-ordination Unit established in Kingston, Jamaica in 1986 undertook the preparation of an in-depth evaluation of the achievements and shortcomings of the Action Plan since its adoption, the preparation of a report summarizing the national reports and highlighting regional environmental problems; and the preparation of a long-term strategy for the future development of the Caribbean Environment Programme. Consultations were held with multilateral and bilateral donors on possible collaboration to enhance environmentally sound sustainable development within the Caribbean basin.

40. As at 31 December 1989, 15 States had acceded to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and 15 had ratified the Protocol concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region. In the initial year, 1982, total contributions of \$120,279 were received, while in 1989, \$680,103 was received, leaving outstanding pledges of \$810,611. The 1989 expenditures amounted to \$925,327.

41. The extension of the trust fund through 31 December 1991 was approved by UNEP's Governing Council at its fifteenth session by its decision 15/43, which was also approved by the Secretary-General.

The Regional Trust Fund for the Implementation of the Acting Plan for the Protection and Development of the Marine Environment and Coastal Areas of the East Asian Seas

42. The trust fund was established in 1981 in support of activities and programmes related to the Action Plan for the Protection and Development of the Marine and Coastal Areas of the East Asian Region.

43. So far activities under the Action Plan have been financed largely by the Environment Fund, due to the lack of funds in the trust fund, but the assessment of concentration levels and trends of non-oil pollutants and their effects on the marine environment in the East Asian Seas Region was financed through the trust fund in 1989.

44. As at 31 December 1989, five countries were participating in the Action Plan and the Trust Fund. In 1982, total contributions of \$86,000 were collected, while in 1989 they amounted to \$116,133. No expenditures were reported in 1989.

45. The extension of the trust fund through 31 December 1991 was approved by the UNEP Governing Council following the request by the Governments concerned at the Seventh meeting of the Co-ordination Body on the Seas of East Asia (COBSEA), Yogyakarta, July 1988. This was subsequently approved by the Secretary-General.

#### Regional Seas Trust Fund for the Eastern African Region

46. This trust fund was established in 1986 to support the programmes and activities related to the Action Plan for the Protection, Management, and Development of the Marine and Coastal Environment of the East African region.

47. Activities under the Action Plan have so far been financed from the Environment Fund, but the first Intergovernmental Meeting on the Action Plan held at Nairobi on 8 and 9 November 1989, decided that activities for the protection and management of marine and coastal areas in the Eastern African region and studies on the sources, levels and effects of the pollutants in the East African Region would be given priority for financing from the trust fund.

48. As at 31 December 1989, nine countries were participating in the Action Plan and had pledged contributions to the trust fund. The cumulative contributions received since the fund was established amounted to \$116,900 as at 31 December 1989, although no expenditures from the fund had been incurred by that date. The trust fund has been extended through 31 December 1991 by the Secretary-General, after approval of this extension by the UNEP Governing Council in its decision 15/43 and the request of the First Intergovernmental Meeting on the Action Plan.

#### Trust Fund for the convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

49. The trust fund was established in 1979 with the aim of supporting the Convention Secretariat and activities to enforce and implement the Convention. The fund is utilized largely to support the personnel and other operational costs at the CITES Secretariat. The Convention had 103 Contracting Parties as at 31 December 1989.

50. The present terminal date of the trust fund is 31 December 1991. While total contributions of \$247,338 were collected in 1980, \$1.6 million was collected in 1989. Total expenditures of \$140,126 were recorded in 1980; these had grown to \$1.77 million by 1989.

Trust Fund for the Convention on the Conservation of Migratory Species of Wild Animals (CMS)

51. This trust fund was established in 1986 with the aim of supporting the Convention Secretariat and activities to the enforcement and implementation of the Convention. The Convention had 28 member States, as well as the EEC, as Contracting Parties as at 31 December 1989. The fund has been utilized largely for the personnel costs and other office-related costs of the Convention Secretariat.

52. The present terminal date of the trust fund is 31 December 1991. A total of \$178,810 was contributed to the trust fund in 1987 and \$258,971 in 1989. Although no expenditures were incurred in 1987, total expenditures in 1989 amounted to \$204,444.

Trust Fund for the Sasakawa Environment Prize

53. This trust fund was established in 1982 with an endowment of \$1 million from the Japan Shipbuilding Industry Foundation, whose Chairman is Mr. Ryoichi Sasakawa. The purpose of the fund is to finance the Sasakawa Environmental Award, which is granted annually in recognition of outstanding contributions to the management and protection of the environment, consistent with the policies, aims and objectives of UNEP.

54. The costs involved in the selection of the prize winner, the award ceremony and the award itself are financed from the interest on the endowment. Nine individuals and institutions have received the prize to date. The 1989 prize was given to Mr. Lester Brown, the President of the Worldwatch Institute founded in 1974 and, a writer and researcher on environmental and agricultural issues for more than 25 years.

55. The total 1989 expenditures amounted to \$96,144. The trust fund has no expiry date.

United Nations Trust Fund for the Environment Stamp Conservation Fund

56. This trust fund was established in 1984 with one sole contribution of \$624,897, which represents a half share of the net proceeds from the sale of a special issue of postage stamp on conservation and protection of nature, allotted to UNEP by the UN General Assembly in its resolution 38/228 to finance conservation activities.

57. The trust fund financed the following seven nature conservation projects: (a) monitoring the status of species and ecosystems by GEMS; (b) guidelines for public participation in conservation programmes; (c) monitoring the status of European and North American cervid populations; (d) wildlife management fellowships; (e) IUCN's contribution to the implementation of the Global Plan of Action for the Conservation, Management and utilization of Marine Mammals; (f) benign research on whales in the waters of Sri Lanka; and (g) monitoring the status of cetaceans.

58. All but the last of these projects had been completed by the end of December 1989. The total 1989 expenditures amounted to \$19,984. The Fund has no expiration date.

Trust Fund for the Vienna Convention for the Protection of the Ozone Layer

59. The First Meeting of the Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer met at Helsinki from 26-28 April 1989, and decided that a trust fund should be established to support the Secretariat of the Convention and activities for the implementation and enforcement of the Convention. The UNEP Governing Council at its 15th session approved the establishment of the fund effective 1 October 1989 through 31 March 1993 by its decision 15/43. Subsequently, the establishment was approved by the Secretary-General.

60. As at 31 December 1989, 53 States and EEC had become the Parties to the Convention. The trust fund is operational for disbursement in 1990, and forward commitments of \$60,000 have been made to date. The total contributions for 1990 received amounted to \$92,839 as at 31 December 1989.

Trust Fund for the Montreal Protocol on Substances that Deplete the Ozone Layer

61. The First Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer met at Helsinki from 2-5 May 1989, and decided that a trust fund should be established to support the Secretariat for the Protocol and activities for its implementation and enforcement. The UNEP Governing Council at its fifteenth session approved the establishment of the Fund effective 1 October 1989 until 31 March 1993 by its decision 15/43. The Secretary-General subsequently approved the establishment. As at 31 December 1989, there were 50 Contracting Parties, including EEC. The total collection of 1990 contributions amounted to \$157,106 as at 31 December 1989 and \$65,000 has been committed to support the Secretariat of the Protocol in 1990.

Trust Fund for Environmental Training Network in Latin America and the Caribbean

62. The Meeting of High-Level Governmental Experts on Regional Co-operation in Environmental Matters in Latin America and the Caribbean met at Brasilia from 27-28 March 1989, and requested that a trust fund be established and administered by UNEP to support the co-ordination mechanism of the Environmental Training Network. The UNEP Governing Council at its fifteenth session approved the establishment of the fund effective 1 July 1989 until 31 December 1991 by its decision 15/43, and the Secretary-General subsequently approved the establishment. Nineteen countries participate in the Network and have made pledges to the trust fund.

63. The trust fund will be operational in 1990, and the total contributions received as at 31 December 1989 amounted to \$80,000. No expenditures were incurred in 1989, although forward commitments of \$64,000 were made for 1990.

**B. TECHNICAL CO-OPERATION TRUST FUNDS**

Technical Assistance Trust Fund to Promote Technical Co-operation and Assistance in Industrial, Environmental and Raw Materials Management, financed by the Swedish International Development Authority (SIDA)

64. The trust fund was established by the Executive Director in 1985 under the authority delegated by the Secretary-General

with an initial contribution of \$243,737 from the Government of Sweden. The Fund was established to finance follow-up activities to those financed under a previous trust fund entitled "Trust Fund for Regional Training Workshops on Environmental Management", which was closed in 1985.

65. The first phase of the activities under the present trust fund involved investigating the feasibility of establishing a network for industrial environmental management and testing its viability. This resulted in two manuals on water quality monitoring and measurements and discharge characterization for the pulp and paper industry, as well as a guide on simplified and practical methods for the environmental impact assessment of existing paper mills.

66. In addition, in 1989 SIDA pledged and paid a further 4.7 million Swedish Kronors (equivalent to \$757,694) to finance follow-up activities to expand the network, among them, additional manuals for the environmentally sound management of the pulp and paper industry, and a training package for national workshops on the industry's impact on the water and land it affects, as well as an assessment of the environmental effects of small existing mills.

67. The total 1989 expenditures amounted to \$232,832. The present trust fund expiration date is 31 December 1991.

Technical Assistance Trust Fund for an Integrated Pilot Project on Environmental Management and Protection of Andean Ecosystems (Cajamarca, Peru) financed by the Government of the Federal Republic of Germany

68. This trust fund was established in 1984 by the Executive Director to support the Integrated Pilot Project on Environmental Management and Protection of Andean Ecosystems financed by the Government of the Federal Republic of Germany in the amount of DM. 3 million (equivalent to \$1,243,024). The project aims at improving the living conditions of the farmers in the area of Cajamarca, Peru through land rehabilitation. The activities of the project involve the preparation of soil and vegetation maps, a micro-climatic survey, a detailed survey of the cultivated herbaceous and woody species and wild plants in the area, improvement of agricultural and animal husbandry techniques, reforestation, and the promotion of soil conservation measures, as well as the construction of new roads and small-scale irrigation systems.

69. The total 1989 expenditures amounted to \$300,948. The present expiration date is 31 December 1989.

Technical Co-operation Trust Fund for Control of Environmental Health Hazards and Promotion of Chemical Safety, financed by the Government of the Federal Republic of Germany

70. This trust fund was established in 1985 and has financed two projects in hazardous waste management and chemical safety: Strengthening of National Environmental Pollution Control Programmes with Particular Reference to Management of Hazardous Wastes, and Strengthening the Environmental Health Programme of the Yemen Arab Republic.

71. The former project involved regional workshops on hazardous waste management, transportation, storage and treatment techniques in Asia and the Pacific, Latin America and the Caribbean and West Asia. The latter project included the formulation of an organizational and functional plan for the Environmental Protection Council of the Yemen Arab Republic, and a long and medium term programme for environmental health, including the Department of Environmental Health, to co-ordinate all departments and institutions related to environmental health activities in the Government of the Yemen Arab Republic. Both projects ended in 1989.

72. The total trust fund contribution was DM. 400,000 (equivalent at that time to \$198,397) and the total 1989 expenditures amounted to US \$95,449. The trust fund expired on 31 December 1989.

Technical Co-operation Trust Fund to Support the Clearing-house Mechanism through Provision of Consultancies on Strategies for Dealing with Serious Environment Problems, financed by the Government of the Kingdom of Norway

73. This trust fund was established in 1985 to assist developing countries in identifying the major environmental problems and defining programmes and activities to deal with them. An ecological survey was undertaken in three project villages and one stock-raising zone in Uganda. Feasibility studies for the improvement of traditional stock-raising methods to upgrade production by stock raisers in their traditional range were carried out in three areas in Sudan.

74. The trust fund has been extended through 28 February 1990.

Technical Co-operation Trust Fund to Provide Consultancies to Developing Countries, financed by the Government of the Republic of Finland

75. This trust fund was established in 1986 in order to assist developing countries to deal with their major environmental problems. A programming mission was sent to Shaoxing, China to prepare a programme of action for urban and industrial water pollution control and the management of the rivers in Shaoxing City, as well as the surrounding water basin area. Another programming mission was sent to the United Republic of Tanzania to prepare a project proposal for overall improvement of environmental management and utilization of the Mpingo tree (African ebony). Similarly, an expert team was sent to Mozambique to draw up a medium-term work programme for rehabilitation and improvement of the environment.

76. A project to assist Viet Nam in investigating the impact of climate variability and climate change in various climate-sensitive sectors started in June 1989. A series of television "spots" on environmental issues for dissemination to African networks have been produced, and an advisory mission was sent to Swaziland to formulate recommendations on institutional arrangements for a proposed National Environmental Authority and on the means of introducing environmental considerations into development policy formulation and planning.

77. The total contribution amounts to \$252,469. The 1989 expenditures amounted to \$81,762. The trust fund expiration date is 31 December 1990.

Technical Co-operation Trust Fund to Provide Experts to the Secretariat of the Southern African Development Co-ordination Conference (SADCC) financed by the Government of the Republic of Finland

78. This trust fund was established in 1986 to provide for an expert to work with the Desertification Control Programme Activity Centre, assisting the SADCC countries in the formulation and implementation of anti-desertification programmes. An officer was appointed in December 1986 and completed his assignment in December 1989.

79. The total contribution was \$300,295, and the 1989 expenditures amounted to \$130,339. The fund is to be closed.

Technical Co-operation Trust Fund to Provide Experts to the UNEP Global Resource Information Database (GRID)

80. This trust fund was established in 1987 to provide for experts to work with GRID in Geneva. One, financed by the Government of Denmark has been working as Senior Computer Systems Analyst since October 1987. A second, financed by the Finnish Government, worked as a Forestry Project Officer from October 1987 through January 1989, while a third, also financed by the Government of Finland, began working as Forest Cover Monitoring Co-ordination Officer in August 1989.

81. The total contributions to date by the two Governments amounted to US\$283,431 and \$269,882 from Denmark and Finland respectively. The total 1988-1989 expenditures amounted to \$382,776. The present expiration date is 31 December 1990.

Technical Co-operation Trust Fund for Activities in Developing Countries on Environmental Awareness and Machinery financed by the Government of the Federal Republic of Germany

82. This trust fund was established in 1988 to assist developing countries in strengthening their national environmental legislation, the integration of environmental considerations into physical planning, economic analysis of environmental changes, and the elaboration of national environmental profiles. It also contributed to the UNEP world-wide poll on environmental awareness.

83. A total of DM 200,000 (equivalent to \$111,043) was contributed for the survey on the environmental awareness in developing countries, which was completed in 1988. The rest of the contribution, DM 600,000 (equivalent to \$344,828) was committed under the project Technical Co-operation to Assess Environmental Problems and Strengthen Environment-Related Policies, Planning and Institutions in Developing Countries. A mission was sent to Rwanda to analyse the legal aspects of the draft Environmental Strategy and Action Plan prepared for that country. Collaboration with various other African countries in the field of environment is being discussed.

84. The contributions to the Fund amount to DM 800,000 (equivalent to \$461,000), and the 1989 expenditures amounted to \$153,989. The present expiration date is 31 December 1990.

Technical Co-operation Trust Fund to Provide Experts to UNEP to Assist in the Development and Implementation of Policy Response Options related to Climate Change financed by the Government of the Netherlands

85. This trust fund was established in February 1989 to provide for an expert to work with GEMS/PAC to assist in the development and implementation of policy options related to climate change. An expert was appointed in March 1989 and completed his assignment in November 1989.

86. The total contribution from the Government of the Netherlands amounted to \$89,653, while the total 1989 expenditures were \$78,742. The trust fund is to be closed.

Technical Co-operation Trust Fund to Provide Experts to the UNEP Ozone Secretariat

87. This trust fund was established by the Executive Director in June 1989, under the authority delegated to him to finance an expert to work with the UNEP Ozone Secretariat through 31 December 1990. One programme officer financed by the Government of the United States of America has been working to assist the interim Secretariat to co-ordinate the work required under the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer.

88. The total contribution amounts to \$70,329, while the 1989 expenditures amounted to \$36,938.

Technical Co-operation Trust Fund for the Establishment of a GRID Centre in Arendal, Norway

89. This trust fund was established in September 1989 and will expire on 31 December 1992. It was set up to finance the establishment of a GRID centre in Norway, contributing to the co-ordination of the efforts in Norway and other Nordic countries dealing with environmental information, resource management, digital mapping telecommunications technology, and the training of personnel from developing countries in GIS techniques.

90. The total contribution amounts to Norwegian Kronors 12.5 million (equivalent in 1989 to \$1.9 million), while the 1989 expenditures were \$73,886.

Special Purpose Trust Fund for the Provision of Junior Professional Officers, financed by the Government of Norway

91. This trust fund was established in 1982 to provide for Junior Professional Officers financed by the Government of Norway. After three years had elapsed, one officer was appointed in the Information and Public Affairs Section from May 1986 through May 1988. Another Junior Professional Officer worked in GEMS/PAC from August 1986 through August 1988, while a third was appointed to work in DES/PAC in April 1989 for two years.

92. The total contributions up to 1989 amounted to \$329,590, while 1989 expenditures amounted to \$47,247. The trust fund has no specific expiry date.

Technical Co-operation Trust Fund for the Provision of Junior Professional Officers, financed by the Government of Japan

93. This trust fund was established in 1985 to provide for Junior Professional Officers financed by the Government of Japan. Seven such experts are currently working in the Office of the Environment Programme and one in the Regional Office for Asia and the Pacific.

94. The total cumulative contribution to date amounts to \$1 million, while the 1989 expenditures were \$367,063. The Trust Fund has no specific expiry date.

Technical Co-operation Trust Fund for the Provision of Junior Professional Officers, financed by the Government of Sweden

95. This trust fund was established in 1988 to provide for Junior Professional Officers financed by the Government of Sweden. Four such experts have been appointed to various sections of the Office of the Environment Programme in 1989.

96. The total contributions to date amount to \$209,417, and 1989 expenditures were \$72,350. The Trust Fund has no specific expiry date.

Technical Co-operation Trust Fund for the Provision of Junior Professional Officers, financed by the Kingdom of the Netherlands

97. This trust fund was established in 1988 to provide for Junior Professional Officers financed by the Government of the Netherlands. Currently three such experts are working in various sections of the Office of Environment Programme.

98. The total contributions to date amount to \$223,737, while the 1989 expenditures amounted to \$76,277. The Trust Fund has no expiry date.

Technical Co-operation Trust Fund for the Provision of Junior Professional Officers, financed by the Government of the Republic of Finland

99. This trust fund was established in 1988 to finance Junior Professional Officers financed by the Government of Finland. Currently, two such experts are working at UNEP, one in OCA/PAC and the other in the Regional Office for Africa in the Secretariat of the African Ministerial Conference on the Environment.

100. The 1989 and total contributions to date amounted to \$157,213, and the 1989 expenditures were \$56,823. The Trust Fund has no specific expiry date.

Special Purpose Trust Fund for the Provision of Junior Professional Officers financed by the Government of Denmark

101. This trust fund was established in 1981 to provide for Junior Professional Officers financed by the Government of Denmark. There are currently four such experts who are working in various sections of the Office of the Environment Programme, as well as in the Regional Office for Africa.

102. The total contributions to date amount to \$694,850, and the 1989 expenditures amounted to \$150,126. The trust fund has no specific expiry date.

Special Purpose Trust Fund for the Provision of Junior Professional Officers, financed by the Government of the Federal Republic of Germany

103. This trust fund was established in 1983, to provide for Junior Professional Officers financed by the Federal Republic of Germany. There are currently three such experts working, respectively, in the Development Planning and Co-ordination Unit, GEMS, and the Bioproductivity and Biochemical Cycling Unit.

104. The total contributions to date amount to \$434,339, while 1989 expenditures were \$119,858. The trust fund has no specific expiry date.

Technical Co-operation Trust Fund for the Provision of Junior Professional Officers financed by the Government of Italy

105. The trust fund was newly established by the Executive Director in July 1989 with no expiry date, following the agreement concluded between the Government of Italy and UNEP. No staff had been financed under the agreement by the end of 1989.

III. PERSONNEL

106. The staffing of the secretariat of the Environment Programme is financed from three sources - from the United Nations Regular Budget, from the Environment Fund and through trust funds and counterpart funds provided by Governments and earmarked for specific projects or purposes.

107. The secretariat comprises staff in the Professional category and above and the General Service category, as reflected in Table 13 and Table 14, which show the breakdown of posts approved and occupied as at 31 December 1988 and 31 December 1989, respectively, for purposes of comparison.

Table 13

Source of financing for professional posts

|                              | Number of posts |          |          |          |
|------------------------------|-----------------|----------|----------|----------|
|                              | 1988            |          | 1989     |          |
|                              | Approved        | Occupied | Approved | Occupied |
| Environment Fund:            |                 |          |          |          |
| (a) PPSC                     | 101a/           | 72a/     |          | 101a/    |
| 73a/                         |                 |          |          |          |
| (b) Projects:                |                 |          |          |          |
| (i) PACs                     | 30              | 18       | 31       | 22       |
| (ii) Others                  | 27              | 23       | 43       | 38       |
| Subtotal                     | 158             | 113      | 175      | 133      |
| Regular budget               | 51b/            | 42b/     |          | 43b/     |
| 37b/                         |                 |          |          |          |
| Trust fund projects          | 15              | 13       | 12       | 10       |
| JPO agreements (trust funds) | 16              | 16       | 22       | 22       |
| Senior Professional Officers |                 |          |          |          |
| financed by Governments      | 5               | 5        | 7        | 7        |
| Special account for support  |                 |          |          |          |
| to trust funds (SASTF)       | 8               | 6        | 10       | 8        |
| Activities financed from     |                 |          |          |          |
| counterpart contributions    | 3               | 3        | 5        | 5        |
| GRAND TOTAL                  | 256             | 198      | 274      | 222c/    |

a/ Including one post on loan to UNCHS.

b/ Including five Field Service posts in the Cable Unit that serve all the organizations in the United Nations Office at Nairobi, as well as UNDP.

c/ Does not include three staff members on mission assignment and special leave without pay.

Table 14

Source of financing for General Service posts<sup>a/</sup>

|                                                    | Number of posts |          |          |                   |
|----------------------------------------------------|-----------------|----------|----------|-------------------|
|                                                    | 1988            |          | 1989     |                   |
|                                                    | Approved        | Occupied | Approved | Occupied          |
| Environment Fund:                                  |                 |          |          |                   |
| (a) PPSC                                           | 211             | 190      | 211      | 188               |
| (b) Projects:                                      |                 |          |          |                   |
| (i) PACs                                           | 35              | 29       | 39       | 38                |
| (ii) Others                                        | 41              | 33       | 40       | 36                |
| Subtotal                                           | 287             | 252      | 290      | 262               |
| Regular budget                                     | 60              | 47       | 49       | 47                |
| Special account for support to trust funds         | 22              | 21       | 28       | 27                |
| Trust Fund projects                                | 9               | 8        | 7        | 7                 |
| Activities financed from counterpart contributions | 10              | 9        | 10       | 10                |
| GRAND TOTAL                                        | 388             | 337      | 384      | 353 <sup>b/</sup> |

<sup>a/</sup> These figures do not include staff members employed against temporary funds. As at 31 December 1989, there were 30 General Service staff serving in temporary assistance posts on the UNEP payroll; seven financed by the regular budget, eight by programme and programme support costs, nine by Environment Fund projects and six by trust funds. This compares with 22 General Service staff members employed against temporary assistance funds as at 31 December 1988, seven of whom were financed by the regular budget, nine by programme and programme support costs, four by projects and two by trust funds.

<sup>b/</sup> Does not include 14 staff members on mission assignment and special leave without pay.

108. During 1989 there was again a decline in the number of posts funded from the UN Regular Budget. Eight Professional and eleven General Service posts were abolished by UN Headquarters as part of the economy measures introduced by the Secretary-General. Consequently, the UNEP secretariat can no longer count on the rationale for Regular Budget funding established after the Stockholm Conference and must increasingly rely on financing through the Environment Fund programme and programme support cost budget (PPSC), through project budgets, and direct government assistance.

109. Moreover, the Governing Council has however requested the Executive Director to aim to restrict expenditure under the PPSC budget to within 33 per cent of expected contributions during the year. Indeed, PPSC expenditures were held at 30 per cent of total expenditures in 1989, with a resulting vacancy rate of 27 per cent of Professional posts and 11 per cent of General Service posts as at 31 December 1989.

110. In view of the above constraints on traditional resources of funding, the Executive Director has encouraged Governments to help to relieve the resulting staff shortage by supporting the Junior Professional Officer (JPO) programme and by financing Senior Professional Officers. By 31 December 1989, UNEP staff included 22 Junior Professional Officers, an increase of 6 over the previous year and several more are anticipated in 1990. Seven Senior Professional Officers were financed by Governments in 1989 and UNDP had also assigned seven UN Volunteers to the UNEP secretariat. Although the Executive Director will continue to need Junior Professional Officers and volunteers, they cannot substitute for fully experienced senior staff and government support is still needed for more senior professionals. Furthermore, in order to redress the overall geographical imbalance created by government-funded staff from developed countries, those Governments participating in the JPO programme have been approached with a view to their financing JPO staff from developing countries as well as their own. Two Governments have already confirmed they are prepared to do this and it is hoped that this trend will continue.

111. Additional project funded staff were authorized in a number of priority areas, bringing the number of project posts from 27 in 1988 to 43 at the end of 1989. The additions were in the Environmental Law and Machinery Unit, the Ozone and Hazardous Wastes Secretariats and the Secretariats of CIDIE and AMCEN. The staff of Information and Public Affairs and Conferences and Governing Council Service were also increased.

112. Table 15 provides an overview of the distribution by function of 222 professional staff of UNEP at 31 December 1989. Annex II shows the distribution of professional staff by nationality and level. It should be noted that of the 222 occupied posts, 26 per cent were held by women.

113. Seven UNEP staff were serving with UNTAG in Namibia and three with UN peace keeping missions during 1989 and seven were on Special Leave Without Pay. As their posts were filled during their absence, they are not included in Table 14.

Table 15

Distribution of professional staff by function and source of funding (as at 31 December 1989)

|                                                 | Regular<br>budget | PPSC<br>budget | JPO<br>trust<br>funds | SPO<br>trust<br>funds | SASTF | Environ-<br>ment Fund<br>projects | Trust<br>fund<br>projects | Activities<br>financed from<br>projects | Total |
|-------------------------------------------------|-------------------|----------------|-----------------------|-----------------------|-------|-----------------------------------|---------------------------|-----------------------------------------|-------|
| 1. Senior management                            | 3                 | 1              | -                     | -                     | -     | -                                 | -                         | -                                       | 4     |
| 2. Regional offices and<br>external relations   | 4                 | 15             | 1                     | -                     | -     | 2                                 | -                         | -                                       | 22    |
| 3. Development of programmes                    | 10                | 16             | 17                    | 5                     | 3     | 16                                | 7                         | 1                                       | 75    |
| 4. Projects - PACs                              | -                 | 1              | -                     | -                     | -     | 12                                | -                         | -                                       | 13    |
| 5. Projects - others                            | -                 | -              | 2                     | 2                     | -     | 13                                | 3                         | 3                                       | 23    |
| 6. Fund Management and<br>Clearing-house        | 1                 | 11             | 1                     | -                     | 3     | 2                                 | -                         | 1                                       | 19    |
| 7. Information                                  | 1                 | 6              | -                     | -                     | -     | 10                                | -                         | -                                       | 17    |
| 8. Conferences and Governing<br>Council Service | 9                 | 6              | -                     | -                     | -     | 2                                 | -                         | -                                       | 17    |
| 9. Administration                               | 9                 | 16             | 1                     | -                     | 2     | 3                                 | -                         | -                                       | 31    |
| 10 Post on loan to UNCHS                        | -                 | 1              | -                     | -                     | -     | -                                 | -                         | -                                       | 1     |
| Total                                           | 37                | 73             | 22                    | 7                     | 8     | 60                                | 10                        | 5                                       | 222   |

/...

Annex IMEMBER STATES OF THE GOVERNING COUNCIL  
FOR THE YEAR 1989

|                              |                                                         |
|------------------------------|---------------------------------------------------------|
| Argentina                    | Libyan Arab Jamahiriya                                  |
| Australia                    | Malta                                                   |
| Bangladesh                   | Mauritania                                              |
| Barbados                     | Mauritius                                               |
| Botswana                     | Mexico                                                  |
| Brazil                       | Netherlands                                             |
| Bulgaria                     | Oman                                                    |
| Burundi                      | Pakistan                                                |
| Canada                       | Poland                                                  |
| Chile                        | Republic of Korea                                       |
| China                        | Rwanda                                                  |
| Colombia                     | Saudi Arabia                                            |
| Costa Rica                   | Senegal                                                 |
| Côte d'Ivoire                | Sri Lanka                                               |
| Czechoslovakia               | Sudan                                                   |
| Dominican Republic           | Sweden                                                  |
| Finland                      | Switzerland                                             |
| France                       | Togo                                                    |
| Gabon                        | Turkey                                                  |
| Germany, Federal Republic of | Uganda                                                  |
| Greece                       | Ukrainian Soviet Socialist Republic                     |
| Guyana                       | Union of Soviet Socialist Republics                     |
| India                        | United Kingdom of Great Britain<br>and Northern Ireland |
| Indonesia                    | United States of America                                |
| Iran (Islamic Republic of)   | Venezuela                                               |
| Iraq                         | Yugoslavia                                              |
| Japan                        | Zaire                                                   |
| Jordan                       | Zimbabwe                                                |
| Kenya                        |                                                         |
| Lesotho                      |                                                         |

MEMBER STATES OF THE UNEP GOVERNING COUNCIL  
FOR THE BIENNIUM 1990-1991

|                              |                                     |
|------------------------------|-------------------------------------|
| Argentina                    | Libyan Arab Jamahiriya              |
| Austria                      | Malta                               |
| Bangladesh                   | Mauritius                           |
| Barbados                     | Mexico                              |
| Botswana                     | Netherlands                         |
| Brazil                       | New Zealand                         |
| Bulgaria                     | Norway                              |
| Burundi                      | Oman                                |
| Canada                       | Pakistan                            |
| Chile                        | Peru                                |
| China                        | Philippines                         |
| Colombia                     | Poland                              |
| Costa Rica                   | Rwanda                              |
| Côte d'Ivoire                | Saudi Arabia                        |
| Czechoslovakia               | Spain                               |
| Finland                      | Sri Lanka                           |
| France                       | Sudan                               |
| Gabon                        | Thailand                            |
| Gambia                       | Togo                                |
| Germany Democratic Republic  | Tunisia                             |
| Germany, Federal Republic of | Turkey                              |
| Guyana                       | Uganda                              |
| India                        | United Kingdom                      |
| Indonesia                    | United States of America            |
| Japan                        | Union of Soviet Socialist Republics |
| Jordan                       | Venezuela                           |
| Kenya                        | Yugoslavia                          |
| Kuwait                       | Zaire                               |
| Lesotho                      | Zimbabwe                            |

## Annex II

**DISTRIBUTION OF UNEP STAFF IN THE PROFESSIONAL CATEGORY AND ABOVE  
BY REGION, NATIONALITY AND LEVEL AS AT 31 DECEMBER 1989<sup>a/</sup>**

| Region & country<br>of nationality | Occupied posts<br>subject to<br>geographical<br>distribution | Number | Occupied posts<br>not subject to<br>geographical<br>distribution <sup>b/</sup> | Number | Total |
|------------------------------------|--------------------------------------------------------------|--------|--------------------------------------------------------------------------------|--------|-------|
| <b><u>African States</u></b>       |                                                              |        |                                                                                |        |       |
| Algeria                            | -                                                            | -      | 1 P-2                                                                          | 1      | 1     |
| Egypt                              | 1 USG, 1 P-5                                                 | 2      | 1 P-5, 2 P-4                                                                   | 3      | 5     |
| Ethiopia                           | 1 FS-4*                                                      | 1      | 1 D-1, 1 P-1                                                                   | 2      | 3     |
| Gambia                             | -                                                            | -      | 1 P-4, 1 P-3 <sup>c/</sup>                                                     | 2      | 2     |
| Kenya                              | 1 D-2, 1 P-4                                                 | 2      | 2 D-1, 1 P-4<br>3 P-3, 5 P-2                                                   | 11     | 13    |
| Libyan Arab<br>Jamahiriya          | -                                                            | -      | 1 P-4, 1 P-3                                                                   | 2      | 2     |
| Mali                               | -                                                            | -      | 1 P-4, 1 P-2                                                                   | 2      | 2     |
| Mauritius                          | -                                                            | -      | 1 P-5                                                                          | 1      | 1     |
| Morocco                            | -                                                            | -      | 1 P-4                                                                          | 1      | 1     |
| Seychelles                         | -                                                            | -      | 1 D-1                                                                          | 1      | 1     |
| Sierra Leone                       | -                                                            | -      | 1 P-3                                                                          | 1      | 1     |
| Somalia                            | -                                                            | -      | 1 P-5                                                                          | 1      | 1     |
| Sudan                              | 1 P-2                                                        | 1      | 1 D-2, 1 P-5                                                                   | 2      | 3     |
| Swaziland                          | 1 P-5                                                        | 1      | -                                                                              | -      | 1     |
| Uganda                             | 1 P-4                                                        | 1      | 2 P-3                                                                          | 2      | 3     |
| United Republic<br>of Tanzania     | -                                                            | -      | 1 P-3                                                                          | 1      | 1     |
| Zaire                              | -                                                            | -      | 1 P-4                                                                          | 1      | 1     |
| Zambia                             | -                                                            | -      | 1 P-3                                                                          | 1      | 1     |
| Zimbabwe                           | -                                                            | -      | 1 P-4, 1 P-3                                                                   | 2      | 2     |
| Subtotal                           |                                                              | 8      |                                                                                | 37     | 45    |

<sup>a/</sup> 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 seemed appropriate to present this list in terms of the same regional groupings.

<sup>b/</sup> Including staff on fund posts and all language staff.

<sup>c/</sup> Staff member occupying post on loan to Habitat.

\* Field service staff.

| Region and country<br>of nationality | Occupied posts<br>subject to<br>geographical<br>distribution | Number | Occupied posts<br>not subject to<br>geographical<br>distribution <sup>b/</sup> | Number | Total |
|--------------------------------------|--------------------------------------------------------------|--------|--------------------------------------------------------------------------------|--------|-------|
| <u>Asian States</u>                  |                                                              |        |                                                                                |        |       |
| Afghanistan                          | -                                                            | -      | 1 P-5                                                                          | 1      | 1     |
| China                                | -                                                            | -      | 1 D-1, 1 P-4<br>1 P-2                                                          | 3      | 3     |
| India                                | 1 D-2                                                        | 1      | 1 P-5, 1 P-4<br>1 P-2                                                          | 3      | 4     |
| Iran                                 | -                                                            | -      | 1 P-4, 1 P-2                                                                   | 2      | 2     |
| Japan                                | 1 P-1                                                        | 1      | 2 D-1, 1 P-5<br>2 P-3, 8 P-2<br>1 P-1                                          | 14     | 15    |
| Malaysia                             | -                                                            | -      | 1 P-4                                                                          | 1      | 1     |
| Myanmar                              | -                                                            | -      | 1 D-1                                                                          | 1      | 1     |
| Nepal                                | -                                                            | -      | 1 P-2                                                                          | 1      | 1     |
| Pakistan                             | -                                                            | -      | 1 P-3                                                                          | 1      | 1     |
| Philippines                          | 1 FS-5                                                       | 1      | 1 P-4, 1 P-3                                                                   | 2      | 3     |
| Singapore                            | -                                                            | -      | 1 P-4                                                                          | 1      | 1     |
| Syrian Arab<br>Republic              | -                                                            | -      | 1 P-5                                                                          | 1      | 1     |
| Turkey                               | -                                                            | -      | 1 P-4, 1 P-3                                                                   | 2      | 2     |
| Viet Nam                             | -                                                            | -      | 1 P-2                                                                          | 1      | 1     |
| Yemen Arab Republic                  | -                                                            | -      | 1 D-1                                                                          | 1      | 1     |
| Subtotal                             |                                                              | 3      |                                                                                | 35     | 38    |
| <u>Eastern European States</u>       |                                                              |        |                                                                                |        |       |
| Czechoslovakia                       | -                                                            | -      | 2 P-5                                                                          | 2      | 2     |
| Poland                               | -                                                            | -      | 1 P-5                                                                          | 1      | 1     |
| USSR                                 | 1 ASG, 1 P-4,<br>1 P-2                                       | 3      | 1 P-5, 4 P-4<br>1 P-3                                                          | 6      | 9     |
| Yugoslavia                           | -                                                            | -      | 1 D-2, 1 P-5                                                                   | 2      | 2     |
| Subtotal                             |                                                              | 3      |                                                                                | 11     | 14    |

| Region and country<br>of nationality     | Occupied posts<br>subject to<br>geographical<br>distribution | Number | Occupied posts<br>not subject to<br>geographical<br>distribution <sup>b/</sup> | Number | Total |
|------------------------------------------|--------------------------------------------------------------|--------|--------------------------------------------------------------------------------|--------|-------|
| <b>Western European and Other States</b> |                                                              |        |                                                                                |        |       |
| Australia                                | 1 P-4                                                        | 1      | 1 P-5, 1 P-4<br>1 P-2                                                          | 3      | 4     |
| Austria                                  | -                                                            | -      | 1 P-5, 1 P-4                                                                   | 2      | 2     |
| Belgium                                  | -                                                            | -      | 1 P-4                                                                          | 1      | 1     |
| Canada                                   | 1 FS-4*                                                      | 1      | 2 P-5, 3 P-4<br>1 P-3, 1 P-2                                                   | 7      | 8     |
| Denmark                                  | 1 P-4                                                        | 1      | 1 P-5, 5 P-2                                                                   | 6      | 7     |
| Finland                                  | -                                                            | -      | 1 P-5, 2 P-2                                                                   | 3      | 3     |
| France                                   | 1 P-5, 1 P-3                                                 | 2      | 1 D-1, 1 P-5<br>1 P-4, 2 P-3<br>1 P-2                                          | 6      | 8     |
| Germany, Federal<br>Republic of          | 1 P-5                                                        | 1      | 1 D-1, 2 P-5<br>1 P-4, 3 P-3,<br>2 P-2                                         | 9      | 10    |
| Greece                                   | 1 P-5                                                        | 1      | -                                                                              | -      | 1     |
| Ireland                                  | 1 FS-5*                                                      | 1      | 2 P-3, 1 P-2                                                                   | 3      | 4     |
| Italy                                    | -                                                            | -      | 1 D-2, 1 P-5<br>1 P-4, 1 P-3                                                   | 4      | 4     |
| Netherlands                              | -                                                            | -      | 1 D-2, 3 P-2<br>2 P-1                                                          | 6      | 6     |
| New Zealand                              | -                                                            | -      | 1 D-1, 1 P-3                                                                   | 2      | 2     |
| Norway                                   | -                                                            | -      | 1 P-5, 1 P-4<br>2 P-2                                                          | 4      | 4     |
| Spain                                    | 1 P-4                                                        | 1      | 1 P-2                                                                          | 1      | 2     |
| Sweden                                   | -                                                            | -      | 1 P-5, 1 P-4<br>2 P-3, 3 P-1                                                   | 7      | 7     |
| Switzerland                              | -                                                            | -      | 2 P-4, 3 P-2                                                                   | 5      | 5     |
| United Kingdom                           | 1 P-5                                                        | 1      | 1 D-2, 1 D-1<br>1 P-5, 2 P-4<br>1 P-3, 1 P-2                                   | 7      | 8     |
| United States of<br>America              | 1 ASG, 1 D-1<br>1 P-5, 1 P-3                                 | 4      | 4 D-1, 4 P-5<br>2 P-4, 4 P-3<br>1 P-1                                          | 15     | 19    |
| Subtotal                                 |                                                              | 14     |                                                                                | 91     | 105   |

| Region and country<br>of nationality | Occupied posts<br>subject to<br>geographical<br>distribution | Number | Occupied posts<br>not subject to<br>geographical<br>distribution <sup>b/</sup> | Number | Total |
|--------------------------------------|--------------------------------------------------------------|--------|--------------------------------------------------------------------------------|--------|-------|
| <u>Latin American States</u>         |                                                              |        |                                                                                |        |       |
| Argentina                            | -                                                            | -      | 1 P-4, 1 P-3                                                                   | 2      | 2     |
| Chile                                | -                                                            | -      | 1 P-5, 1 P-4                                                                   | 2      | 2     |
| Colombia                             | -                                                            | -      | 1 P-4, 1 P-3                                                                   | 2      | 2     |
| Ecuador                              | -                                                            | -      | 1 P-2                                                                          | 1      | 1     |
| Haiti                                | -                                                            | -      | 1 P-3                                                                          | 1      | 1     |
| Jamaica                              | 1 D-2                                                        | 1      | 1 P-5, 3 P-2                                                                   | 4      | 5     |
| Mexico                               | -                                                            | -      | 1 P-2                                                                          | 1      | 1     |
| Panama                               | -                                                            | -      | 1 D-1                                                                          | 1      | 1     |
| Peru                                 | -                                                            | -      | 1 D-2, 1 P-4                                                                   | 2      | 2     |
| Uruguay                              | -                                                            | -      | 1 P-3                                                                          | 1      | 1     |
| Venezuela                            |                                                              |        | 1 D-1, 1 P-5                                                                   | 2      | 2     |
| Subtotal                             |                                                              | 1      |                                                                                | 19     | 20    |
| =====                                |                                                              |        |                                                                                |        |       |
| Total                                |                                                              | 29     |                                                                                | 193    | 222   |
| =====                                |                                                              |        |                                                                                |        |       |

### ANNEX III

#### IMPLEMENTATION OF UNEP'S PROGRAMME BUDGET 1988-1989 (As at 31 December 1989)

This annex contains a list of activities in the Programme Budget for 1988-1989 approved by the Governing Council in June 1987. For this reason, it is advisable to read the present annex in conjunction with the approved Programme Budget for the biennium 1988-1989 (UNEP/GC.14/16). Under each activity of the approved Programme Budget is the expected output, as presented to the Governing Council at its fourteenth session. Opposite each projected activity output is the project (or projects) approved for implementation to achieve the stated output. More detailed information on each project in the list is available upon request.

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

232

4101 GEMS

Proposed activity (UNEP/GC.14/16)

1. Management of GEMS/PAC.

Output: operational global networks, environmental data and assessments published for use by environmental managers.

2. Support to the Conservation Monitoring Centre (CMC).

Output: assessments on the status of selected species and groups; two specific analyses and one global assessment targeted by 1989 for use by environment planners.

3. Rangeland monitoring.

Output: national rangeland assessment and management plans; AVHRR monitoring methodologies for biomass estimates.

4. Integrated monitoring in biosphere reserves.

Output: a global monitoring network; publications; pollution pathways identified.

5. Global assessment of soil degradation.

Output: assessment of the state and trends of soil degradation for use by environmental managers.

6. Forest resource assessment and damages due to acid rain.

Output: assessment of extent and changes in forest cover; assessment of forest damage due to acid rain in the ECE region for use by environmental managers and background information for the preparation of conventions.

Approved project

FP/4101-86-02 Management of the Global Environment Monitoring System Programme Activity Centre (GEMS PAC) - Phase II (Internal).

FP/4101-86-02 Management of the Global Environment Monitoring System Programme Activity Centre (GEMS PAC) - Phase II (Internal).

FP/4101-86-02 Management of the Global Environment Monitoring System Programme Activity Centre (GEMS PAC)- Phase II (Internal).

FP/4101-86-02 Management of GEMS PAC (Internal).

FP/4101-88-02 International symposium on the state of the art of remote sensing technologies for biosphere studies (Unesco and UNEPCOM).

FP/4101-83-01 Pilot project on integrated monitoring of temperate biosphere reserves (WMO and Unesco).

FP/9101-87-88 Global assessment of soil degradation (ISRIC, FAO, ISSS).

FP/4101-86-03 Acidification in tropical countries (SCOPE).

FP/9101-86-95 Assessment and monitoring of air pollution effects on forests in the ECE region (ECE).

FP/GI/9101-87-96 Global Resource Information Database (GRID) (Internal).

FP/4101-86-02 Management of GEMS PAC (Internal).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

4101 GEMS

Proposed activity (UNEP/GC.14/16)

7. Health-related monitoring.

Output: expanded networks (80 countries targeted); assessment on water quality, air pollution and food contamination; data and information reports (Sentinel); Establishment of 10 human exposure assessment locations; strengthened national health-related monitoring programmes in 50 member States for pollution control.

8. Support to the Monitoring and Assessment Research Centre (MARC) King's College, London.

Output: assessment statements on environmental pathways and human exposure to various pollutants; four technical analyses for development of control strategies.

9. Climate-related monitoring.

Output: expanded network, mainly in developing world, to assess trends in precipitation chemistry, particulate matter, carbon dioxide, turbidity; climate system bulletins; data available through WMO, later also through GRID leading to a better understanding of the climate system.

10. Environmental data Reports.

Output: environmental data reports for use by decision makers.

11. GRID, the Global Resource Information Data Base.

Output: global, regional and national data sets for environmental assessment and management; five case-studies in UNEP concentration areas and two major assessments of applicability of GRID to be used by environmental managers for planning activities.

Approved project

FP/4101-75-03 Air pollution monitoring (WMO).

FP/4101-76-03 Food and animal food contamination monitoring programme (WHO and FAO).

FP/4101-76-05 Global water quality monitoring (WHO).

FP/4101-78-06 Pilot project on assessment of human exposure to pollutants through biological monitoring: development of HEALS (Human Exposure Assessment Locations).

FP/4101-88-01 Monitoring and Assessment Research Centre (MARC) (King's College, London).

FP/4101-87-02 World Glacier Monitoring (ETH).

FP/4101-88-10 Background Air Pollution Monitoring (BAPMON) - Phase III (WMO).

FP/9101-88-84 IGBP - A Study of the Impact of Climate Change Planning Phase (ICSU).

FP/4101-84-02 Climate Relationship Phase II (WMO and Unesco).

FP/4101-88-01 Monitoring and Assessment Research Centre (MARC).

FP/9101-87-91 Support to the World Resources Report (WRI).

FP/4101-86-02 Management of the Global Resource Information Database (GRID) (Internal).

FP/GI/9101-87-96 Development of the Global Resource Information Database (GRID) (Internal).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

234

4101 GEMS

Proposed activity (UNEP/GC.14/16)

12. Regional network for environmental monitoring.  
Output: a first phase in the implementation of the pan-African environmental monitoring network (AFRINEN) to co-ordinate, standardize and expedite the collection, analysis and dissemination of environmental data on the state and trends of renewable natural resources for use by national, subregional and regional institutions.

13. Determination of land cover and primary production through remote sensing.  
Output: a preliminary methodology to estimate biomass production for management purposes.

Approved project

FP/RA/CP/9101-88-81 Implementation of the African Programme of Action on the Environment (Internal).

FP/4101-79-01 Pilot project on the inventory of Sahelian pastoral ecosystems (FAO).  
FP/4101-86-02 Management of GEMS PAC (Internal).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

4102 ATMOSPHERE:

Proposed activity (UNEP/GC.14/16)

1. Assessment of ozone layer modification and its impact  
Output: three assessment statements; publication of Ozone Layer Bulletin; meeting of Co-ordination Committee on the Ozone Layer (physical aspects); meeting of Co-ordinating Committee on the Ozone Layer (health and environmental impacts).

2. Support of the interim secretariat of the Vienna Convention for Protection of the Ozone Layer.  
Output: co-ordination of relevant data and technical information collection and dissemination to facilitate implementation of Vienna Convention for the Protection of the Ozone Layer.

World Climate Impact Studies Programme

3. Scientific Advisory Committee of the World Climate Impact Studies Programme (WCIP).  
Output: recommendations of the Scientific Advisory Committee to review progress in the WCIP and recommend programme development.

4. Regional socio-economic assessment of impacts of climate change and analysis of policy response alternatives.  
Output: expert group policy meetings in two selected regions (one developing and one developed); assessment statement on policy options for use in national decision-making.

Approved project

FP/9101-87-72 Impact of climate variability and change on socio-economic systems (Internal).

FP/9101-89-83 Support to the Interim Secretariat for the implementation of the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer (Internal).

FP/9101-87-72 Impact of climate variability and change on socio-economic systems (Direct).

FP/4101-89-03 Climate System Monitoring (WMO).

FP/4102-87-01 Technical workshop on formulating policy options and strategies to take account of climate studies (Beijer Institute).

FP/4102-88-02 Socio-economic impacts and policy responses resulting from climate change. A study in Southeast Asia (Direct).

FP/4102-88-04 Socio-economic impacts and policy responses to climate change in Brazil (SEPLAN/CE, Brazil).

FP/RA/CP/9101-88-81 Implementation of the African Programme of Action on the Environment - Phase II (Direct).

4102 ATMOSPHERE:

Proposed activity (UNEP/GC.14/16)

5. Assessment of impact of sea level rise in coastal and river delta areas.

Output: assessment statement and policy guidance report for two selected regions (one developing and one developed).

6. Advisory Group on Greenhouse Gases.

Output: recommendations of the Advisory Group to international organizations on programme activities relevant to the greenhouse effect/climate issue.

7. Assessment of the impacts of extreme climate variability and change, including drought, on climate sensitive sectors e.g. agriculture, water, energy, health.

Output: three assessment statements, case study reports and recommendations for mitigation of drought impacts; support to African Centre of Meteorological Applications for Development.

8. Co-ordination of national climate impact studies.

Output: inventory of national climate impact studies to improve use of climate information for economic development.

9. Training in and application of methods of climate impact study.

Output: seminars and workshops for training in application of climate impact assessment methods.

Approved project

FP/4102-88-03 Criteria for Assessing vulnerability to sea level rise:

A global inventory of high risk areas (Delft Hydraulics, The Netherlands).

FP/9101-87-72 Impact of climate variability and change on socio-economic systems (Direct).

FP/4102-84-04 Support for the development of the implementation plan for the international satellite land-surface climatology project-Phase II (COSPAR).

FP/4102-88-01 Evaluation of drought early warning and response in Ethiopia (NMSA-Ethiopia).

FP/4102-88-02 Socio-economic impacts and policy responses resulting from climate change: a study in South-East Asia (Direct).

FP/4102-88-04 Socio-economic impacts and policy responses to climate change in Brazil (SEPLAN/CE).

FP/4102-89-02 Case studies of climate related impact assessment in Vietnam (Resources Env. Centre, Hanoi).

FP/4102-88-05 Possible responses to anticipated climate change: Governments and international agencies (Beijer Institute).

FP/9101-87-72 Impact of climate variability and change on socio-economic systems (Direct).

FP/9101-87-72 Impact of climate variability and change on socio-economic systems (Direct).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

4102 ATMOSPHERE

Proposed activity (UNEP/GC.14/16)

10. Second World Climate Conference, 1989.

Output: report and recommendations to Governments for climate applications in policy development.

Weather modification

11. Determination of environmental consequences of deliberate or inadvertent weather modification.

Output: research reports to prevent adverse regional environmental impacts.

New activities:

12. International conference on sources and future concentrations of atmospheric trace gases.

Output: guidelines on international response legal instrument to global atmospheric issues.

Approved project

FP/9101-87-72 Impact of climate variability and change on socio-economic systems (Internal).

No further development of this activity to be undertaken.

FP/4102-87-03. International Conference on policy implications of the growing chemical contamination of the global atmosphere (AES-Canada).

ADDITIONAL PROGRAMME

Implementation of Governing Council decision 14/20 and General Assembly resolution 43/53 on Global Climate Change.

FP/RA/4102-89-01 Support to the Intergovernmental Panel on Climate Change (IPCC).

7102 INTERNATIONAL REGISTER OF POTENTIALLY TOXIC CHEMICALS (IRPTC)

Proposed activity (UNEP/GC.14/16)

1. IRPTC Programme Activity Centre.

Output: co-ordination of a global information network on chemicals; collection, validation, processing and assessment of chemical data, provision of training facilities and materials.

2. Preparation, storage and dissemination of data profiles for chemicals and other chemical data compilations; IRPTC bulletins.

Output: publication and dissemination of data profiles and other technical data compilations; two issues of the IRPTC Bulletin per year.

3. Co-operation with and assistance to national and international information systems as contributing network partners.

Output: operation and expansion of a global inter-active information network on chemicals; trained manpower.

4. Co-operation with and support for international chemical safety programmes, particularly IPCS.

Output: environmental health criteria documents, health and safety guides, international chemical safety cards, 50 trainees.

5. Continued operation and expansion of the query/response service.

Output: data and advice to Governments and others involved in chemical hazard assessment and control operations.

Approved project

FP/CP/7102-86-01 International Register of Potentially Toxic Chemicals Programme Activity Centre (IRPTC PAC) Phase IV (Direct).

FP/7102-86-02 Control of hazards posed by chemicals to human health and the environment - Phase II (UNEP/COM).

FP/CP/7102-86-01 IRPTC PAC (Direct).

FP/7102-86-02 Control of hazards posed by chemicals to human health and the environment - Phase II (UNEP/COM).

FP/CP/7102-86-01 IRPTC PAC (Direct).

FP/7102-86-02 Control of hazards posed by chemicals to human health and the environment - Phase II (UNEP/COM).

FP/CP/7102-86-01 IRPTC PAC (Direct).

FP/7102-86-02 Control of hazards posed by chemicals to human health and the environment - Phase II (UNEP/COM).

FP/7101-88-03 Protection of the environment against dangerous chemicals (UNEP/COM).

FP/CP/7102-86-01 IRPTC PAC (Direct).

FP/7102-86-02 Control of hazards posed by chemicals to human health and the environment - Phase II (UNEP/COM).

Implementation of UNEP PBD 1989-1989  
(as at 30 December 1989)

7102 INTERNATIONAL REGISTER OF POTENTIALLY TOXIC CHEMICALS (IRPTC)

Proposed activity (UNEP/GC.14/16)

6. Review of information on environmentally dangerous chemical substances and processes of global significance.

Output: dissemination of evaluated scientific information on chemicals with advance warning function.

7. Implementation of a notification scheme for banned and severely restricted chemicals.

Output: improved information exchange for control of hazardous chemicals in international trade.

8. Guidelines for the environmentally sound management of hazardous wastes and the safe handling and use of chemicals.

Output: improved protection of human health and environmental quality from noxious effects of chemicals and wastes.

9. Regular workshops and training courses for national correspondents.

Output: trained network partners.

Approved project

FP/CP/7102-86-01 IRPTC PAC (Direct).

FP/7102-86-02 Control of hazards posed by chemicals to human health and the environment - Phase II (UNEPCOM).

FP/CP/7102-86-01 IRPTC PAC (Direct).

FP/7102-86-02 Control of hazards posed by chemicals to human health and the environment - Phase II (UNEPCOM).

FP/CP/7102-86-01 IRPTC PAC (Direct).

FP/7102-86-02 Control of hazards posed by chemicals to human health and the environment - Phase II (UNEPCOM).

FP/CP/7102-86-01 IRPTC PAC (Direct).

FP/7102-86-02 Control of hazards posed by chemicals to human health and the environment - Phase II (UNEPCOM).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

240

3104 INFOTERRA

Proposed activity (UNEP/GC.14/16)

Approved project

1. Operation of INFOTERRA Programme Activity Centre.  
Output: operation of the Programme Activity Centre, a global environmental information system, an environmental database; an operational query-response service; bulletins and technical publications; national environmental information systems, especially in developing countries; trained manpower.  
FP/3104-86-01 INFOTERRA Programme Activity Centre - Phase VII (Internal).
2. Provision of referral services.  
Output: referral services provided to users in all countries, United Nations and other organizations.  
FP/3104-86-01 INFOTERRA PAC (Internal).
3. Support to acquisition of substantive information by developing countries.  
Output: on-line access to data banks; improved substantive information from 24 Special Sectoral Sources and 8 Regional Service Centres.  
FP/3104-86-01 INFOTERRA PAC (Internal).
4. Development and strengthening of the network of national focal points.  
Output: training of 30 focal points; promotion of use of INFOTERRA. Assistance to focal points in computerizing their operations; strengthening telecommunications links within INFOTERRA network.  
FP/3104-86-01 INFOTERRA PAC (Internal).
5. Publications.  
Output: INFOTERRA International Directory and supplements, for distribution to all INFOTERRA focal points and United Nations organizations; INFOTERRA specialized directories, for distribution to specialists; environmental experience exchange series; INFOTERRA Bulletin and bibliographies of selected United Nations documents on the environment, for distribution to focal points.  
FP/3104-86-01 INFOTERRA PAC (Internal).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

3105 STATE OF THE ENVIRONMENT

Proposed activity (UNEP/GC.14/16)

1.Preparation of annual state-of-the-environment reports.

Output: two annual state-of-the-environment reports.

2.Analysis of environmental issues of global significance.

Output: report on emerging environmental issues.

3.Support for the preparation of national state-of-the-environment reports.

Output: national state-of-the-environment reports prepared by developing countries with the assistance of UNEP.

Approved project

Financed from Regular Budget and Prog. and Prog. Support Costs Budgets:

The State of the Environment 1988. Doc. UNEP/GC.15/7/Add.1

The State of the World Environment 1989. Doc. UNEP/GC.15/7/Add.2

Outline of SOE 1990 Report "Children and the Environment".

Doc. UNEP/GC.15/7/Add.4.

Follow-up of Implementations of previous SOE reports.

Doc. UNEP/GC.15/7/Add.5.

FP/3105-88-02 The State of the Environment: achievements in environmental protection since Stockholm (Direct).

Financed from Regular Budget and Prog. and Prog. Support Costs Budgets:

Emerging Environmental Issues. Doc. UNEP/GC.15/7/Add.3.

FP/8201-85-03 The State of the Environment in some developing countries (Direct).

FP/3105-88-03 Establishment of national environmental profiles (Direct).

ADDITIONAL ACTIVITIES

RA/3105-88-01 Preparation of a book entitled "Hazardous Environmental Events" (Direct).

RA/CP/3105-87-01 International Survey of Public Attitudes to Environmental Issues (Direct).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

5101 OCEANS AND COASTAL AREAS

242

(a) Global marine environment

Proposed activity (UNEP/GC.14/16)

1. Evaluation of the state of the art of coastal modelling; global review of the state of the marine environment; assessment of long-term ecological consequences of low-level marine contamination; review of carcinogenics and nutrients as marine pollutants  
Output: the reviews and studies will be published and distributed to Governments, international and national institutions and scientists for information and advice for the development of programmes for the protection of the oceans and management of its resources, including the implementation of the regional seas programme.

2. Development, testing and application of guidelines and reference methods for marine pollution studies, and development of standards and reference materials to be used with these methods.  
Output: twenty reference methods and two reference materials published, distributed and used by networks of national institutions participating in UNEP-sponsored marine pollution research and monitoring programmes, in order to ensure global comparability of data.

3. Development of guidelines for the assessment of environmental impacts of the disposal of radio active wastes on the sea-bed as well as of sea-bed mining (IAEA, IMO).  
Output: guidelines for use in assessment of environmental impacts of sea-bed mining and of radioactive waste disposal.

4. Analysis of economic aspects of marine pollution.  
Output: the analysis may assist Governments and national policy makers in defining their environmental management policies.

Approved project

FP/5101-82-01 Support to GESAMP and selected GESAMP Working Groups (Internal).

FP/5102-85-04 IUCN Assistance to interregional activities on Coral Reef Management (IUCN).

FP/5102-88-03 Development of new methodologies and provision of comprehensive technical support for regional and global marine pollution assessments (IAEA).

FP/9101-85-01 Support to the 14th International Conference Pacem in Maribus. (IOI).

FP/5101-84-01 Development, testing and Intercalibration of guidelines and reference methods for marine pollution studies (IAEA)

FP/5101-87-01 Global sentinel organisms monitoring system (IOC).

FP/5102-88-03 Development of New Methodologies and Provision of Comprehensive Technical Support for Regional Global Marine Pollution Assessments (IAEA).

FP/5101-82-01 Support to GESAMP and selected GESAMP Working Groups (Internal).

FP/5102-86-02 Programme Activity Centre for Oceans and Coastal Areas (Direct).

Implementation of UNEP PBD 1988-1989  
(as at 30 December 1989)

5101 OCEANS AND COASTAL AREAS

(b) Regional Seas

Proposed activity (UNEP/GC.14/16)

1. Co-ordination of the oceans and coastal areas sub-programme (three elements under budget line 21) through direct implementation of a number of projects or through supervision and guidance of projects implemented by co-operating agencies and supporting organizations.  
Output: co-ordination of UNEP's oceans programme according to the decisions of the Governing Council and relevant intergovernmental meetings.

2. Implementation of the Mediterranean Action Plan: promotion of the establishment of marine parks and protected areas, promotion of the construction of marine waste outfalls and waste treatment plants, manual on environment impact assessment, provision of equipment and technical assistance to participants in the Action Plan.  
Output: four national contingency plans, three national monitoring programmes signed, 20 technical reports, adopted protocol on the control of pollution from offshore exploration and exploitation, 250 experts trained in subjects relevant to the Action Plan.

Approved project

FP/5102-86-02 Programme Activity Centre for Oceans and Coastal Areas (Direct).

FP/ME/CA/5102-84-04 Internal support to the Implementation of MED POL and Assistance to National Institutions (Direct).

FP/ME/CA/5102-75-01 The Mediterranean Programme Activity: Implementation of the action plan adopted at the Barcelona meeting (Direct).

FP/ME/5102-76-06 Regional Oil Combating Centre for the Mediterranean (IMO).

FP/ME/5102-81-01 Mediterranean Action Plan: Support to the Implementation of MED POL - Phase II (Unesco, IOC, WMO, IAEA, FAO, WHO).

FP/ME/5102-83-05 Support to Regional Activity Centre for Priority Action Programme (PAP/RAC).

ME/5102-84-02 Support to Regional Activity Centre for Mediterranean Specially Protected Areas (SPA/RAC).

FP/ME/CA/5102-84-04 International Support to the Implementation of MED POL and Assistance to National Institutions (Direct).

ME/5102-86-01 Blue Plan - Second and Third Phase (BP/RAC).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

5101 OCEANS AND COASTAL AREAS

244

(b) Regional Seas

Proposed activity (UNEP/GC.14/16)

3. Implementation of the Kuwait Action Plan: Assistance to the secretariat of Action Plan (ROPME) in its implementation.  
Output: several technical reports resulting from specific project activities; further strengthening of national capabilities by training of experts in subjects relevant to the action plan; environmental impact assessments in several countries.

4. Implementation of the Caribbean Action Plan; implementation of decisions of Contracting Parties to the Cartagena Convention.  
Output: twenty-three priority projects implemented; protocols on land-based sources of pollution and protection of endangered species adopted.

Approved project

FP/KA/9101-81-52 UNEP Support to the Kuwait Action Plan (Direct).

FP/CR/CP/5102-86-05 Support for the Regional Co-ordinating Unit for the Action Plan of the Caribbean Environment Programme (Direct).

FP/CR/5102-87-02 Development of Environmental Education and Public Awareness in the Wider Caribbean Region Phase II (CCA).

FP/CR/5102-88-01. Assessment and Control of marine pollution in the Wider Caribbean (IOC/Unesco).

FP/CR/5102-88-02 Environmental Management of Coastal Areas and Terrestrial Ecosystems Influencing the Marine Environment of the Wider Caribbean (Direct).  
CR/5102-84-08 IOC/UNEP Support of the CARIPOL Regional Programme for Research and Monitoring of Petroleum Pollution in the Marine Environment (IOC).

CR/5102-85-01 Development of Specific Methodologies for the Preparation of Environmental Impact Assessment in the Wider Caribbean (Government of Mexico).

CR/5102-86-04 Promotion of the Survival and Recovery of Endangered, Threatened and Vulnerable Seas Turtles in the Caribbean Region (WIDUCAST).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

5101 OCEANS AND COASTAL AREAS

(b) Regional Seas

Caribbean Action Plan:

Proposed activity (UNEP/GC.14/16)

Approved project

FP/CR/5102-88-01 Assessment and control of marine pollution in the Wider Caribbean (IOC).

FP/CR/5102-88-02 Environmental management of coastal areas and terrestrial ecosystems influencing the marine environment of the Wider Caribbean (Direct).

FP/CR/5102-88-04 Development and implementation of a common methodology for the assessment of the coastal water quality for the Wider Caribbean Region (CEP 25) (INDERENA).

FP/CR/CP/5102-86-05 Support for the Regional Co-ordinating Unit for the Action Plan of the Caribbean Environment Programme (Direct).

CR/5102-87-06 Sub-regional oil spill contingency planning in the Wider Caribbean - Phase II (IMO).

CR/5102-87-07 Environmental management of bays and coastal zones in the Wider Caribbean (Unesco).

CR/5102-87-08 Assessment of contamination by hydrocarbons and other pollutants in the south-eastern waters of the Caribbean Sea (Government of Venezuela).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

246

5101 OCEANS AND COASTAL AREAS

(b) Regional Seas

Proposed activity (UNEP/GC.14/16)

5. Implementation of the West and Central African Action Plan; implementation of decisions of Contracting Parties to the Abidjan Convention.

Output: three national contingency plans and one multilateral contingency plan; three studies on national marine environmental legislation; harmonization of national legislation with the Abidjan Convention; network for marine pollution monitoring areas requiring special protection identified; environmental impact assessment.

6. Implementation of the Eastern African Action Plan; implementation of decisions of Contracting Parties to Nairobi Convention.

Output: marine pollution research monitoring network; national contingency plans for maritime emergencies; management plans for a network of protected areas, including training of managers.

7. Implementation of the East Asian Seas Action Plan; implementation of decisions of the Co-ordinating Body on the Seas of East Asia.

Output: operational co-operative network of pollution monitoring and research institutions.

Approved project

FP/5102-82-03 UNEP support to the Action Plan for West and Central African Region (Direct).

FP/5102-82-20 Monitoring of Pollution in the Marine Environment of West and Central African Region (WACAF/2) (FAO, IOC, WHO, IAEA).

FP/CP/5102-82-04 UNEP Support to the Development of an Action Plan for the Eastern African region (Direct).

FP/5102-82-05 UNEP support to the East Asian Seas Action Plan (Internal).

FP/ES/5102-87-03 Development of Management Plans for Endangered Coastal and Marine Living Resources in East Asia (Government of Malaysia).

FP/ES/5102-87-09 Assessment of Land Based Urban, Industrial and Agricultural Sources of Pollution, their Environmental Impact and Development of Recommendations for possible Control Measures (EAS-21). (Government of Singapore).

FP/ES/5102-82-17 Study of the Maritime Meteorological Phenomena and Oceanographic Features of the East Asian region (Government of Thailand).

FP/ES/5102-82-19 Assessment of the Concentration Levels and Trends of non-oil Pollutants and their effects on the marine environment in the EAS region (Government of Philippines).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

5101 OCEANS AND COASTAL AREAS

(b) Regional Seas

Proposed activity (UNEP/GC.14/16)

8. Implementation of the Red Sea and Gulf of Aden Action Plan; Assistance to PERSGA in the implementation of the Action Plan.

Output: trained experts for participation in national and regional environmental projects; national contingency plans for maritime emergencies.

9. Implementation of the South Pacific Action Plan; assistance to the secretariat of the action plan according to decisions of countries participating in the South Pacific Regional Environment Programme.

Output: about 25 technical reports from various projects of the action plan; fully operational regional networks of research and training institutions.

10. Implementation of the South-East Pacific Action Plan: assistance to the secretariat of CPPS in the implementation of the Action Plan according to the decisions of Contracting Parties to the Lima Convention.

Output: expanded pollution monitoring programme; national contingency plans to control pollution in cases of emergencies; case-studies on environmental impact assessment; training and intercalibration exercises.

Approved project

Support provided to the Secretariat of PERSGA under project FP/5102-86-02 Programme Activity Centre for Oceans and Coastal Areas (Direct).

FP/ES/5102-82-14 UNEP Support to the Implementation of the South Pacific Regional Environment Programme - SPREP (SPC, SPEC, ESCAP).  
FP/9101-87-89 Support to SPREP for Improved Environmental Education, Training and Information in the South Pacific (SPC).

FP/CR/5102-86-06 UNEP support to the Implementation of the Action Plan for the South East Pacific (CPPS).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

5101 OCEANS AND COASTAL AREAS

248

(b) Regional Seas

Proposed activity (UNEP/GC.14/16)

11. Implementation of the South Asian Seas Action Plan: implementation of decisions taken by Governments participating in the Action Plan.

Output: action plan and convention for South Asian Seas region adopted; implementation of priority projects initiated.

12. Preparation of global, regional and subject-specific directories and bibliographies relevant to the oceans and coastal areas subprogramme.

Output: fifteen directories and bibliographies .

13. Interregional co-operation.

Output: seven interregional seminars; five inter-regional intercalibration workshops; five inter-regional courses on analytical techniques for marine pollution studies; five interregional seminars on environmental impact assessment; consultations between secretariats; interregional seminars on data management, etc.

Approved project

FP/5102-84-01 UNEP support to the development of an action plan for the South Asia Seas Region (Direct).

FP/5102-87-05 Development of an Operational Regional Contingency Plan for Responding to Marine Pollution Emergencies in the South Asia Seas Region (IMO).

FP/5102-87-10 Development of a System of Protected Areas in the South Asian Seas (IUCN).

FP/5102-84-06 Directories of Marine Science Institutes and bibliographies of marine pollution (FAO).

FP/5102-87-12 Islands Directory (IUCN).

CP/RA/FP/9101-88-81 Implementation of the African Programme of Action on the Environment - Phase II (Direct).

FP/5102-86-02 Programme Activity Centre for Oceans and Coastal Areas (Direct).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

5101 OCEANS AND COASTAL AREAS

(c) Living marine resources

Proposed activity (UNEP/GC.14/i6)

1. Implementation of the Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals.  
Output: Continuous co-ordination of marine mammals conservation activities world-wide; five technical reports distributed through network of supporting organizations; twenty individuals trained on marine mammal management and conservation techniques.

2. Protection of fishery resources of developing countries from pollution and environmentally sound fisheries management.  
Output: guidelines and manuals for protection of fisheries resources from pollution and on environmentally sound fisheries management techniques; pilot projects combined with training on the application of guidelines and manuals.

Approved project

FP/5103-85-09 UNEP Support to the Implementation of the Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals (Direct).

ST/5103-85-01 Benign Research on Whales (National Aquatic Resources Agency (NARA), Trincomalee, Sri Lanka).

ST/5103-85-07 IUCN's Contribution to the Implementation of the Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals (IUCN).

Activity implemented by FAO.

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

250

5201 WATER

Proposed activity (UNEP/GC.14/16)

1. Approval and implementation of Zambezi Action Plan (ZACPLAN).

Output: approved Zambezi Action Plan; implementation of its Phase I: Initial network of monitoring stations established within the basin-wide integrated monitoring system for water quantity and quality; improvement of water supply, health and sanitation conditions; 100 professionals trained to implement the Action Plan.

2. Development of two action plans for fresh water bodies in Africa (e.g. lakes Chad, Victoria, Tanganyika, River Nile).

Output: two draft action plans submitted for approval of the basin countries 100 experts trained. Commencing the implementation of environmental assessment part of the action plan.

3. Preparatory work for further action plans in Asia and Latin America.

Output: at least two international water systems identified for action plans (ground-water aquifer, river systems); preparatory work started.

4. Assistance to the Governments to develop EMINWA programmes for national water systems (Governments of India and Brazil; 1987).

Output: two action plans on the sound management of water resources in national river basins in India and Brazil.

Approved project

FP/5201-84-05 Environment management of the common river system of the Zambezi - Phase I (Direct).

CP/RA/FP/9101-88-81 Implementation of the African Programme of Action on the Environment - Phase II (Direct)

FP/5201-89-01 Training course on lake management for specialists from Lake Chad Basin (UNEP/COM).

No projects were approved on this item. Negotiations are underway with Governments of the two regions.

No projects initiated on this item. Proposals of the Secretariat have not met with the agreement of the countries concerned.

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

5201 WATER

Proposed activity (UNEP/GC.14/16)

5. Development of a network of specialized training institutes in developing countries to train experts to implement river basin plans of action, including the improvement of rural drinking water supply and sanitation and the preparation of training materials and technical publications.

Output: international training network established; 200 professionals from developing countries trained in environmentally sound water development; training and information materials to be distributed to national training and decision-making institutions in the countries involved in action plans.

6. Development and implementation of methodologies for assessing and forecasting environmental impacts of large-scale water development projects including dams.

Output: pilot project on the use of inundated acid sulphate soils in the Mekong Delta area to promote sustainable agricultural development; training of 30 professionals to manage the pilot project and to disseminate the results.

Approved project

FP/5201-87-05 Development of Human Resources for Environmentally Sound Water Management (CEFIGRE).

FP/5201-87-07 Regional workshop on management of the environmental impact of water resources development projects (ESCAP).

FP/5201-86-02 Inter-regional workshop on hygienic aspects of drinking water quality control (WHO/UNEP/COM).

FP/CP/5201-85-03 Integration of environmental aspects into water resources engineering education (Unesco).

FP/5201-83-02 Establishment by UNEP of an Advisory Group in Water Resources and working group on large-scale water development project (Direct).

FP/5201-87-03 Ecologically sustainable development of Water and Land Resources in the Mekong Delta (UNEP/COM).

FP/5201-89-02 Support to the Third Scientific Advisory Assembly of International Association of Hydrological Sciences, Baltimore, U.S.A. (IAHS).

FP/5201-87-06 Development of a Support System for Managing Large International Rivers (IIASA).

FP/5201-84-06 Assessment and Evaluation of Multiple Objective Water Resources Projects (UNDTCD).

IMPLEMENTATION OF UNEP PROGRAMME 1989-1989  
(as at 31 December 1989)

252

5201 WATER

Proposed activity (UNEP/GC.14/16)

7. Assessment and management of fresh-water bodies.

Output: water quality monitoring facilities; water quality control programmes for Lake Victoria and Lake Managua; 30 trained experts on water quality management.

8. Development and management of the all-African network of water resources (follow-up of the Cairo Conference).

Output: under priority C, a basic network of subregional centres established. Under priority S, a comprehensive network of national centres will be developed.

9. Reuse of domestic waste-water for irrigation.

Output: two pilot projects (one priority C and one S) to demonstrate the safe reuse of domestic sewage for irrigation; 30 professionals from the African and West Asian regions trained.

Approved project

FP/5201-87-02 Survey of the State of World Lakes - Phase I (ILEC).

FP/9101-87-92 Promotion of Environmentally Sound Management of Lakes (ILEC).

FP/5201-85-01 Integrated environmental evaluation of water resources development (Unesco).

FP/5201-85-02 Effluent monitoring and pollution control in the Lake Victoria basin of Kenya (LBDA).

FP/5201-87-04 Protection of transboundary inland waters against accidental pollution (ECE).

FP/5201-89-03 Development of environmentally-sound management strategies in the humid tropics (Unesco).

CP/RA/FP/9101-88-81 Implementation of the African Programme of Action on the Environment - Phase II (Direct).

FP/5201-84-04 Evaluation of health hazards of waste-water reuse (WHO).

FP/5201-88-02 Control of drinking water quality in rural areas - Phase II (WHO).

FP/5201-88-03 Guidelines for the conduct of "community based" projects to motivate and assist communities to provide themselves with sufficient drinking water and good sanitation facilities in an environmentally sound manner (KWAHO).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6101 SOILS

Proposed activity (UNEP/GC.14/16)

1. Assistance to Governments in the formulation of national soils policies and their integration with other natural resource policies.  
Output: environmentally sound national soil policies adopted in three countries.

2. Application of existing methodologies for the assessment of global soil degradation, erodibility and erosivity.  
Output: soil degradation assessment manual, trainees on soil degradation assessment, a global soil degradation map (1:10,000,000) and a pilot soil degradation map (1:1,000,000).

3. Promotion of technology of biological nitrogen fixation by strengthening MIRCEN projects.  
Output: guidelines and demonstration projects on application of biological nitrogen fixation to increase soil fertility.

4. Testing and promotion of integrated watershed development and management systems.  
Output: one pilot project on watershed management, to be used for demonstration purposes in the region; 20 trainees to assist the Government of Jamaica in applying the natural resources management approach to watersheds in other regions of the country.

Approved project

FP/6101-88-01 Advisory Services to Syria and Uganda on the formulation of National Soils Policies (FAO).

FP/9101-87-88 Global Assessment of soil degradation (ISRIC).

FP/9101-86-94 Conservation and management of plant genetic resources and wild relatives (IBPGR).

FP/9101-86-96 Training in production and application of high quality biofertilizer inoculants (UNEP/COM).

FP/6101-87-01 Private Lands Demonstration project - Environmental Management of Hope River Watershed (Government of Jamaica)

FP/9101-86-98 Public Lands Demonstration project. Environmental Management of Hope River Watershed (Government of Jamaica).

FP/9101-83-71 Application of integrated land/soil management in mountain ecosystems - Preparation of guidelines (Government of Bulgaria and UNEP/COM).

FP/CP/9101-87-90 A pilot project for utilising locally adapted genetic resources, renewable energy, underground water, soil and other resources for food and fodder production in the arid area of East Oweinat (Egypt).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

254

6101 SOILS

Proposed activity (UNEP/GC.14/16)

5. Demonstration of sustainable agriculture through pilot villages and the development of an African network on soils and fertilizers.

Output: pilot projects on sustainable agricultural development in selected African villages in five countries; 45 trainees in sustainable agriculture, regional data on land use and local fertilizer resources, (follow-up of the African Ministerial Conference on the Environment).

6. Integration of land issues and components in the Zambezi Action Plan.

Output: three pilot projects on appropriate land use in different agroecological zones, for demonstration purposes and training.

Approved project

CP/RA/FP/9101-88-81. Implementation of the African Programme of Action on the Environment - Phase II (Direct, in association with African Governments).

Delayed. Activities were initiated at the end of 1989 (Project FP/6101-89-04).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6102 FORESTS AND OTHER ECOSYSTEMS

Proposed activity (UNEP/GC.14/16)

1. Co-ordination and harmonization of international action in support of national efforts for rational management of forest resources within the context of the Tropical Forestry Action Plan.

Output: environmentally sound development of forest resources; management plans for specific areas.

2. Conservation of ecologically significant critical and/or unique forests and wildland habitats through appropriate, including in situ, management practices for specific forest genetic resources and tree species.

Output: Selected forest genetic resources and sites protected. Training of national staff.

3. Continuous monitoring and assessment of forest resources.

Output: global, national and regional assessments for planners and decision makers; improved methodology.

Approved project

FP/6102-88-01 Support to the Implementation of the Tropical Forestry Action Plan (Direct).

FP/6102-85-02 Sub-regional programme of the natural potential and sub-tropical forest ecosystems in Central America and Mexico (CATIE).

FP/PA/6103-84-01 Integrated pilot project on environmental management and the protection of Andean ecosystems (Government of Peru).

FP/6102-87-02 Training course on the application of agroforestry in arid and semi-arid zones for French-speaking African countries (UNEP/COM).

FP/6102-87-01 International training seminar on forestry applications of remote sensing for Spanish-speaking developing countries (UNEP/COM).

FP/6103-86-01 Evaluation of air pollution pressure through pine needles analyses and mapping (Polish Botanical Garden).

FP/9101-86-95 Assessment and monitoring of air pollution effects on forests in the ECE Region (ECE).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6102 FORESTS AND OTHER ECOSYSTEMS

Proposed activity (UNEP/GC.14/16)

4. Collaboration in the implementation of international agreements and conventions.

Output: detailed plan of collaboration with ITTO.

5. Incorporation of forestry related activities within regional programmes such as the Cairo Programme for African Co-operation, the Zambezi Action Plan, etc.

Output: improved development and management of forest resources in selected sites; training of national staff; data available for improved decision-making.

Approved project

This activity was not implemented due to lack of resources.

CP/RA/FP/9101-88-81 - Implementation of the African Programme of action on the Environment - Phase II (Internal).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6105 WILDLIFE AND PROTECTED AREAS

Proposed activity (UNEP/GC.14/16)

Approved project

Renewable resources management and conservation

1. Promotion and implementation of the World Conservation Strategy.

Output: advice to Governments; three national conservation strategies adopted; data bases on species, habitats and protected areas; conservation directories; species action plans and guidelines.

2. Implementation of the Action Plan for Biosphere Reserves.

Output: advice to Governments on request; operational biosphere reserves in selected representative areas of the world's biogeographic provinces for improved conservation of ecosystems and biological diversity.

3. Regional training programmes for the management of wildlife and protected areas in developing countries.

Output: fellowships for 50 trainees from developing countries to improve management skills in wildlife and protected areas and related living resources conservation activities. Development of training materials and methodologies.

ST/6105-84-05 Guidelines for public participation in conservation programmes (Kenya Wildlife Fund Trustees).

FP/9101-86-97 Strategic resource planning in Uganda (Direct).

FP/9101-88-83 Further Support to the Steering Committee for the Preparation and Promotion of a Second Edition of the World Conservation Strategy - Phase II (IUCN).

FP/9101-86-94 Conservation and management of plant genetic resources and wild relations (IBPGR).

FP/6105-89-01 Training course for biosphere managers in Anglophone African countries (Unesco).

FP/6105-85-01 Wildlands, protected areas and wildlife management in Latin America and the Caribbean (FAO).

FP/6105-89-02 Analysis and evaluation of the management of biological diversity in Eastern Africa in relation to natural resources management (ACI).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

258

6105 WILDLIFE AND PROTECTED AREAS

Proposed activity (UNEP/GC.14/16)

4. Implementation of the principles of the World Charter for Nature through continued development and implementation of global and regional conservation conventions on wild animals, plants and habitats.

Output: advice to Governments on request; increased ratification and application of conservation conventions: CITES, Bonn Convention on Migratory Species of Wild Animals, Ramsar Convention on Wetlands, and the Paris Convention Concerning the Protection of the World Cultural and Natural Heritage.

5. Promotion of wildlands wildlife and protected areas management programmes.

Output: improved management of particular wildlands including wetlands, wildlife species and protected areas in selected representative areas of the world's biogeographic provinces.

Approved project

FP/RA/CP/MS/6105-84-03 Secretariat of the Convention on the Conservation of Migratory Species and Wild Animals.

RA/FP/CT/CP/6105-84-04 (2564) Provision by UNEP of the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (Direct).

FP/6105-82-01 Regional/quarterly bulletin on wildlife, national parks and wildland conservation for Africa - Nature et Faune (FAO).

FP/6105-85-01 Wildlands, protected areas and wildlife management in Latin America and the Caribbean (FAO).

FP/6105-84-02 Improving management of wildlife and protected areas (IUCN).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6106 GENETIC RESOURCES

Proposed activity (UNEP/GC.14/16)

1. A co-ordinated international programme on crop and tree genetic resources and wild relatives  
Output: crop and tree genetic resources and wild relatives surveyed, collected and/or conserved ex situ and in situ; some 40 technicians, professionals and decision makers from developing countries trained; illustrative booklet on the needs for in situ conservation; information newsletters.

2. A global register and regional gene banks of microbial genetic resources.  
Output: a global referral system facilitating information exchange and technology transfer; expanded updated World Data Centre on Micro-organisms (WDC); two specialized catalogues; 20 professionals and technicians from developing countries trained in strain data application in biotechnology

3. Gene banks and registers for animal breeds.  
Output: regional data banks for animal genetic resources in Africa, Asia; Latin America and Western Asia; a pilot cryogenic centre for conservation of animal genetic resources in Africa; semi-annual information newsletter; 40 technicians and professionals from developing countries trained in conservation and management of animal genetic resources.

4. A global register and regional gene banks of plant species, with emphasis on crop and tree genetic resources and wild relatives.  
Output: a global referral system facilitating information exchange and technology transfer; expanded updated World Data Centre on Micro-organisms (WDC); two specialized catalogues; 20 professionals and technicians from developing countries trained in strain data application in biotechnology

Approved project

FP/9101-86-94 Conservation and Management of Plant Genetic Resources and Wild Relatives (IPGR).

FP/6106-86-02 Support to the establishment and operation of a co-ordinated international microbial strain data network (WFCC).

FP/6106-82-02 Conservation of animal genetic resources, Phase II (FAO).

FP/6102-88-01 Support to the Implementation of the Tropical Forestry Action Plan (TFAP).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6106 GENETIC RESOURCES

260

Proposed activity (UNEP/GC.14/16)

5. Field application of microbial technologies for environmental management, e.g. increased soil fertility, and food production, pest and vector control, mining, crop residue utilization and biodegradation of pollutants.

Output: Pilot applications of relevant technologies by MIRCENs; training of 250 specialists from developing countries.

6. Biogeotechnology of metals.

Output: guidelines for application and environmental management bio-leaching; biogeotechnology oriented MIRCEN in India; training of 20 technicians from developing countries in microbial mining.

Approved project

FP/6106-85-02 Field Application of microbial technologies for pest and vector control and for degradation of persistent chemical insecticides in the environment (Cairo Mircen).

FP/6106-85-03 Field application of microbial technologies for biological pest and vector control and for increasing legume protein production through BNF (Nairobi MIRCEN).

FP/6106-85-04 Upgrading of Cassava wastes by appropriate biotechnologies (Bangkok MIRCEN).

FP/6106-85-05 Upgrading of Coffee Processing By-Products by Appropriate Biotechnologies (Guatemala MIRCEN).

FP/6106-85-06 Production and Quality Control of Rhizobin/Legume Inoculants (Instituto de Pesquisas Acromics) (Porto Alegre MIRCEN).

FP/6106-87-01 Microbial Technologies for degradation of persistent pollutants (UNEP/COM).

FP/9101-83-61 Contribution to the State of Knowledge on field application of microbial technologies for environmental betterment (Direct).

FP/2104-85-02 Biogeotechnology of metals as and environmentally sound and rational use of mineral resources (UNEP/COM).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6106 GENETIC RESOURCES

Proposed activity (UNEP/GC.14/16)

7. Application of genetic resources and bio-technologies for increased food and energy production at the village level and for rehabilitation of arid and semiarid zones.

Output: pilot applications of local genetic resources and skills for rehabilitation of livestock and improved management in arid and semi-arid zones and villages in three African countries selected as follow-up to the First African Ministerial Conference on the Environment.

8. National/regional programmes for the exploration, conservation, management and utilization of genetic resources.

Output: national conservation programmes; an African network for conservation and management of genetic resources; legal instruments for conservation of genetic resources in three African countries.

Approved project

FP/6106-83-03 Demonstration project for increasing legume protein production in small farms through Biological Nitrogen Fixation - Sudan (AGFUND).

FP/6106-84-02 Demonstration project for increasing legume protein production in small farms through BNF "Senegal" (FAO).

FP/CP/9101-87-90 Pilot project for utilizing locally adapted genetic resources, renewable energy, underground water and other resources for food and fodder production in the arid area of East Oweinat (Egypt).

CP/RA/FP/9101-88-81 Implementation of the African Programme of Action on the Environment - Phase II.

IMPLEMENTATION OF UNEP PROGRAMME 1983-1989  
(as at 31 December 1989)

262

6107 LITHOSPHERE (INCLUDING BIOGEOCHEMICAL CYCLES)

Proposed activity (UNEP/GC.14/16)

1. Co-ordination of the international programme on the global biogeochemical sulphur and carbon cycles and their interaction with human activities.

Output: publication of five scientific synthesis reports on the sulphur and carbon cycles. Three workshops on sulphur behaviour in terrestrial and aquatic ecosystems; two workshops on carbon and nutrient cycling in lakes and estuaries in Asia; one workshop on the interaction between the carbon and sulphur cycles (60 participants).

2. Geology and environment: promotion and application of environmentally sound technology in mineral resources exploitation and land-use planning.

Output: guidelines on environmentally sound mineral resources exploitation, to be used by Governments to protect the lithosphere.

3. Application of guidelines on environmentally sound mineral resources exploitation.

Output: two demonstration areas in developing countries to apply the guidelines.

4. Initiation of a co-ordinated international programme on the phosphorus cycle.

Output: proceedings of an international workshop, addressing essential elements of an international phosphorus cycle programme.

Approved project

FP/4103-86-01 The Sulphur cycle in aquatic ecosystems and in interaction with other biogeochemical cycles (SCOPE and UNEP/COM).

FP/4103-87-01 Global carbon and nutrients cycling in lakes and estuaries (SCOPE).

FP/6107-89-02 Compiling of data about the biogeochemistry of small catchments and setting up a network of scientists researching on this subject - Phase I (SCOPE).

FP/6107-86-01 Geology and Environment - Phase II(UNESCO).

Activity not implemented due to lack of financial resources.

FP/6107-87-01 Phosphorous cycles in Terrestrial and aquatic ecosystems and their interactions with the cycles of other elements (SCOPE).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6108 BIOPRODUCTIVITY RESEARCH

Proposed activity (UNEP/GC.14/16)

1. Relating soil dynamics and soil chemistry to terrestrial bioproductivity.

Output: publication addressed to decision makers on the interaction between photosynthesis and key biogeochemical processes in terrestrial bioproductivity and decay.

Approved project

FP/4102-83-06 Primary Productivity and Photosynthesis in natural ecosystems of the tropics in relation to environmental variables (King's College, London).

FP/6108-88-01 Environment changes and the productivity of tropical grasslands (King's College, London).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6201 DESERTIFICATION CONTROL

Proposed activity (UNEP/GC.14/16)

1. Output: Implementation of the UNEP desertification control programme to the Governing Council decisions and General Assembly resolutions and relevant intergovernmental meetings.
2. Output: Six to eight feasibility studies prepared; four pilot projects launched based on previous studies in Africa; guidelines on environmental management methods for grazing lands in African countries; personnel trained under the pilot projects.
3. Identification and development of appropriate technologies for desertification control and economic development.  
Output: Technologies for the-exploitation of water resources for irrigation and domestic use; technologies for development of renewable energy resources for application in land reclamation, food production and domestic use.
4. Assistance to countries in the formulation of national or subregional plans to combat desertification and implementation of anti-desertification projects under the plans.  
Output: Four national plans of action in Africa, one in Asia and one in Latin America.

Approved project

- FP/6201-87-01 Desertification Control Programme Activity Centre (DC PAC) Phase II (Direct).
- FP/6201-87-12 Agro-Sylvo-Pastoral Integrated development of four Pilot Villages and one Livestock Zone in Senegal, Phase 1. (Senegal).  
FP/6201-88-01 Rehabilitation of the Human Environment and Planning for Sustainable Development in the Pilot Villages of Gombi, Butaleza and Ruhama in Uganda - Phase 1 (Government of Uganda).
- FP/6201-87-13 Field trial of UNEP prototype animal driven pump in Sahelian conditions (Mali).  
FP/CP/9101-87-90 Pilot project for utilizing locally adapted genetic resources, renewable energy, underground water, soil and other resources for food and fodder production in the arid area of East Oweinat (Egypt).
- FP/6201-86-01 Creation of a seed bank and promotion of revegetation activities in Southern Tunisia (IAR, Tunisia).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6201 DESERTIFICATION CONTROL

Proposed activity (UNEP/GC.14/16)

Approved project

(contd.)

5. Convening of seventh session of DESCON in consultation with co-sponsors. FP/6201-87-01 DC/PAC - Phase II (Direct).  
Output: Approval and funding of priority desertification control projects; information exchange and policy harmonization among DESCON members.

6. Stimulation and co-ordination of desertification control activities of the United Nations system through the Inter-Agency Working Group on Desertification (IAWGD). FP/6201-87-01 DC/PAC - Phase II (Direct).  
Output: Thematic joint programming and increased co-ordination within the United Nations system and among other international organizations; implementation of projects under the Plan of Action to Combat Desertification.

7. Implementation of the Plan of Action to Combat Desertification in the Sudano-Sahelian region (programme support to UNSO). FP/6201-88-02 Programme Support to the United Nations Sudano-Sahelian Office for Assistance to the Countries of the Sudano-Sahelian Region in Implementing the Plan of Action to Combat Desertification Phase II (UNSO).  
Output: Management of anti-desertification programmes in the sub-region; desertification control projects.

8. Development of a desertification information system in DC PAC. FP/9101-87-99 IIED - "Survival in the drylands" information network.  
Output: Operational desertification information system; FP/6201-87-01 DC/PAC - Phase II (Direct).  
Desertification Control Bulletin (two issues a year in English and French); two teaching manuals per year; preparation and dissemination of other information materials (films, slides, shows, posters, etc.) for use by Governments, NGOs and research institutions.

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

266

6201 DESERTIFICATION CONTROL

Proposed activity (UNEP/GC.14/16)

9. Development of a methodology for the assessment and monitoring of desertification processes for use by Governments in setting up computerized geographical information systems on natural resources.  
Output: Methodology on monitoring and assessment of desertification based on pilot projects; four to six geographical information systems established in countries or regional bodies for use in planning anti-desertification project activities.

10. International desertification control training courses.  
Output: 200 people trained per year in sand dune fixation, afforestation, pasture development and treatment of salinized soils and in the management of semi-arid lands.

Approved project

FP/6201-87-10 Development of a Methodology for Assessment of Desertification in the South Saharan Arid, Semi-arid and sub-humid Ecozones (IGN).  
FP/6201-87-04 Desertification Assessment and Mapping National Pilot Study (Kenya).  
FP/9101-87-88 Global Assessment of Soil Degradation (ISRIC).

FP/6201-87-05 Support to West African Countries in Strengthening National Desertification Control Activities through Research and Training (UNEP/COM).  
FP/6201-87-03 Support to Training Course in Desertification Assessment and Control for Latin America and the Caribbean (IADIZA).  
FP/6201-87-11 Support to a Training Course in China for ESCAP Region Countries on Desertification Assessment and Control Using Remote Sensing (IDRAS), Lanzhou).  
FP/6201-87-06 Support to Regional Desertification Control Training Programme for the Southern Africa Development Co-ordination Conference Countries (SADCC) (UNEP/COM).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

6201 DESERTIFICATION CONTROL

Proposed activity (UNEP/GC.14/16)

11. Establishment of three regional networks of research and training institutions.

Output: Co-ordinated research and training programmes at the regional level to combat desertification.

12. Support to regional networks for afforestation and sand dune stabilization (Latin America).

Output: Institutions in the Latin American region co-ordinating afforestation and sand dune stabilization programmes.

13. Establishment of regional networks of NGOs active in the field of desertification.

Output: NGO networks in Africa and Latin American regions contributing to implementation of the Plan of Action to Combat Desertification.

14. Assistance in designing and co-ordination of regional activities and programmes for desertification control in Africa.

Output: Three subregional action plans around the Somali-Chalbi, Sahara and Kalahari deserts for common approach in combating desertification, the outputs to be used by Governments and donor countries to implement the United Nations Programme of Action for African Economic Recovery and Development 1986-1990 and the OAU Africa's Priority Programme for Economic Recovery 1986-1990.

Approved project

FP/6201-86-03 Assistance for Establishment of a Network of Research and Training Centres for Desertification Control in the ESCAP Region (UNEP/COM).

FP/6201-87-05 Support to West African Countries in Strengthening National Desertification Control Activities through Research and Training (UNEP/COM).

FP/6201-87-07 Support to Regional Research Training and Communication Programme on Desertification Control in the Arab States of Western Asia (UNEP/COM).

FP/6201-87-01 DC/PAC - Phase II (Direct).

FP/6201-86-02 Support to African NGOs Network to Combat Desertification (ANEN).

FP/9101-87-99 IIED - "Survival in the Drylands" Information Networks.

FP/6201-87-02 Expert Consultation on African Desert and Arid Lands Committee under the Cairo Programme (Direct).

FP/6201-87-01 DC/PAC - Phase II (Direct).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

7101 ENVIRONMENTAL HEALTH

268

Proposed activity (UNEP/GC.14/16)

1. Environmental management for improved biological safety.  
Output: three pilot demonstration projects on priority environmental measures for control of communicable diseases; manpower trained on community involvement; pilot demonstration project will be replicated in other countries.
2. Promotion of chemical safety in developing countries through IPCS.  
Output: 29 criteria documents on the risk evaluation of chemicals, 82 health and safety guides and 200 international chemical safety cards; 120 people trained in assessment of risk of chemicals; guidelines will be used for setting up safety standards.
3. Promotion of food safety in selected developing countries.  
Output: 30 specialists trained in control of environmental contaminants of food losses prevention; one set of guidelines on the prevention of food contaminants and losses.
4. Control of selected zoonoses.  
Output: two field demonstration projects in African countries on control of animal trypanosomiasis.
5. Assistance to selected developing countries of Africa, Latin America, Asia, in promoting the safe application of pesticides.  
Output: guidelines for use by authorities in developing countries; approximately 150 personnel trained in Asia, Africa and Latin America.

Approved project

- FP/7101-87-02 Support to IAEMS/Latin American Symposium on Genetic Monitoring for protection of human health and the environment, San Jose, Costa Rica, March 1988 (IAEMS).
- FP/7101-88-02 Protection of the environment and human health against dangerous chemicals Phase III A (WHO).  
FP/7101-88-03 Protection of the environment against dangerous chemicals Phase III B (UNEP/COM).  
CP/FP/7101-86-02 Workshop on chemical safety for Africa (Direct).
- FP/7101-86-03 Improvement of Mycotoxins Control in Tanzania (FAO and UNEP/COM).  
FP/9101-87-85 Support to the Second International Conference on Mycotoxins (FAO).
- FP/5201-82-01 WHO/FAO/UNEP Panel of experts on environmental management for vector and disease control (Direct).
- FP/6104-85-03 Training for self reliance in ecological pest management in the tropics - Phase 1 Africa (ICIPE).  
FP/7101-88-01 Training workshop on handling and use of Pesticides for Womens Group Leaders in Thailand (NCSWT).  
FP/7101-88-04 Training course on health aspects of pesticide use (UNEP/COM).  
FP/6104-85-01 Promotion of appropriate procedures to minimise pesticide applications for crop production in favour of non-chemical methods and strategies (FAO).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

7101 ENVIRONMENTAL HEALTH

Proposed activity (UNEP/GC.14/16)

6. Incorporation of health safeguards in water resources development.  
Output: two sets of guidelines on the control of water-borne vectors and pests to be used in water resources planning and development.

7. Development and implementation of specific programmes to demonstrate the integrated crop production approach in developing countries.  
Output: pilot projects for replication in different tropical countries; at least 25 people trained; development and implementation of national integrated crop production programmes.

8. Environmental health management related to pollution and hazardous substances.  
Output: revision of health-related environmental quality standards; assistance to developing countries in establishing environmental pollution and hazardous wastes control systems.

Approved project

FP/7101-87-03 Training course on water supply, sanitation and health for environmental health officers working with the Palestinian people (WHO).  
FP/CP/7101-87-01 Improvement of food safety and drinking water quality in Bahrain (Government of Bahrain).

FP/6104-76-05 Implementation and co-ordination of the FAO/UNEP co-operative global programme for the development and application of integrated pest control in agriculture (FAO).

FP/9101-87-95 Public health impact of agrochemicals (WHO/UNEPCOM).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

8101 PEACE, THE ARMS RACE AND THE ENVIRONMENT

Proposed activity (UNEP/GC.14/16)

1. Effects of military activities on the environment

Output: preparation and dissemination of two studies on the environmental consequences of regional or local conflicts.

Approved project

FP/8101-88-01 Studies in Environmental Security (PRIO).

FP/8101-86-01 Environment and Military Activity - Phase II (SIPRI).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

2103 ENERGY

Proposed activity (UNEP/GC.14/16)

1. Updating and study of selected energy systems.

Output: three technical reports on various energy systems to be used by decision-makers. One popular book for general audience.

2. Assessment and management of the health and environmental risks of energy and other complex industrial systems.

Output: 100 trainees in risk management; report on data and models for risk management for the technical community in developing countries.

3. Environmentally safe nuclear fuel cycles.

Output: preparation of legal instruments on various aspects of the nuclear fuel cycle.

4. Integrated rural energy development.

Output: three integrated rural energy projects demonstrating that different activities can be fuelled from environmentally favourable energy systems. 250 trainees from pilot villages and pastoral zones in sustainable utilization of renewable energy regional network on new and renewable sources of energy in Africa.

Approved project

No projects were approved to implement this activity.

FP/2103-79-01 Comparative assessment of the environmental impacts of commercial sources of energy (Direct).

FP/2103-87-01 Inter-agency Project on the Assessment and Management of Health and Environmental Risks from Energy and other Complex Industrial Systems - Phase I (IAEA, WHO).

FP/2103-88-01 Development of a computerized energy environment planning system. (Beijer Institute).

No projects were approved to implement this activity.

Following ECOSOC Resolution 1988/174 a report on The Effects on the Environment of the Dumping of Nuclear Wastes, prepared by IAEA, was presented to the 15th session of the Governing Council (Doc. UNEP/GC.15/9/Add.6).

FP/2103-83-02 Plantation and efficient utilization of fuelwood in rural areas in Kenya (Bellerive Foundation).

CP/RA/FP/9101-88-81 Implementation of the African Programme of Action on the Environment (AMCEN) - Phase II (Direct).

2104 INDUSTRY AND TRANSPORTATION (INCLUDING WORKING ENVIRONMENT)

Proposed activity (UNEP/GC.14/16)

1. Operation of the Industry and Environment Office.

Output continued operation of the Office.

2. Preparation of new technical publications and updating of existing ones (sectoral or cross-sectoral).

Output: technical publications, and guidelines published for non-ferrous metals, petroleum, aluminium, sugar production, textiles or tanneries, cement, environmental impact assessment of industrial complexes, chemicals, urban transportation and electroplating. Used by governments and industry to improve environmental management.

3. Support for training activities and, on request, technical assistance in various industrial sectors or cross-sectors.

Output: trained personnel (300 to 350), environmental problems diagnosed and solved in at least six developing countries.

4. Publication and dissemination of the quarterly review Industry and Environment.

Output: four issues per year in English, French and Spanish.

Approved project

FP/CP/2104-86-02 Environmentally sound management of industry and transportation: Industry and Environment Office (Direct).

FP/CP/2104-86-02 Environmentally sound management of industry and transportation: Industry and Environment Office (Direct).

FP/CP/2104-86-02 Environmentally sound management of industry and transportation: Industry and Environment Office (Direct).

FP/2104-89-01 International training seminar on ecologically sound methods of organizing urban transportation systems (UNEPCOM).

FP/CP/2104-86-02 Environmentally sound management of industry and transportation: Industry and Environment Office (Direct).

Implementation of UNEP PBD 1988-1989  
(as at 31 December 1989)

2104 INDUSTRY AND TRANSPORTATION (INCLUDING WORKING ENVIRONMENT)

Proposed activity (UNEP/GC.14/16)

5. Follow-up to the World Industry Conference on Environmental Management.

Output: publications (six case studies and six environmental audits), problems diagnosed and solved, trained personnel (six countries, 20 to 25 trainees in each of six countries).

6. Biogeotechnology of metals.

Output: guidelines for application and environmental management of bioleaching, training of 20 technicians from developing countries in microbial leaching.

Working Environment

7. Control of major hazards in industry.

Output: guidelines to develop measures for the prevention and control of major hazards in industry.

Approved project

FP/CP/2104-86-02 Environmentally sound management of industry and transportation: Industry and Environment Office (Direct).

FP/2104-85-02 (2569) Biogeotechnology of metals as an environmentally sound and rational use of mineral resources (UNEP/COM).

FP/CP/2104-86-02 Environmentally sound management of industry and transportation: Industry and Environment Office (Direct).

ADDITIONAL ACTIVITIES

Governing Council Decision 14/30 "Environmentally sound management of hazardous wastes".

EH/2104-87-01 Strengthening of national environmental pollution control programmes with particular reference to management of hazardous wastes (Direct, in association with WHO).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

7104 HUMAN SETTLEMENTS

Proposed activity (UNEP/GC.14/16)

1. Application of guidelines on the Environmental aspects of human settlements planning and management in large metropolitan areas.

Output: case-studies and application of environmental guidelines in support of sound planning and management of seven selected large metropolitan areas.

2. Promotion of environmental aspects of rural settlements planning and management.

Output: one demonstration project; integrated development of rural settlements for self-sufficiency in energy, water, recycling wastes.

3. Training of specialists in environmentally appropriate waste management in settlements.

Output: 100 technicians trained in appropriate solid, liquid and gaseous waste management; trained technicians will in turn initiate training in waste management in their own countries.

4. Pilot demonstration project on environmentally sound waste management in human settlements.

Output: Three pilot demonstration projects, one each in urban areas in Africa, Asia and Latin America.

Approved project

FP/7104-84-02 Guidelines (including criteria) on environmental health aspects of housing and urban planning (Phase I) (WHO).

FP/7104-89-01 Application of guidelines on environmental health aspects in housing and urban planning (WHO in association with UNEPCOM).

FP/7104-84-01 Pilot Demonstration Project on Environmentally-Sound Planning and Development of Human Settlements in the People's Democratic Republic of Yemen (PDY) (UNCHS).

Activity to be undertaken in next biennium (1992-1993).

Activities delayed. Project FP/7104-89-01 initiated in June 1989.

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

3101 ENVIRONMENTAL EDUCATION AND TRAINING

Proposed activity (UNEP/GC.14/16)

1. Further implementation of the International Environmental Education Programme with Unesco (May 1986).

Output: incorporation by 15 countries of environmental education dimension into the educational secondary levels. Systematic incorporation of environmental education into curricula of two universities per region; 2,000 participants in specialists seminars; publication and dissemination of about 30 documents on curricula, pilot projects and seminars; publication and dissemination of eight issues of the Connect newsletter; review of the progress in the implementation of the strategy for the development of environmental education in the 1990s as follow up of the Moscow Congress. Development of environmental education prototype programme and materials for technical, vocational and non-formal education. Adaptation of technical environmental materials from UNEP, Unesco, ILO, IUCN and other international organizations for use as basic teaching materials.

2. Support for regional action programmes for environmental education and training in developing regions.

Output: technical co-operation among countries and exchange of experience and information; 1,000 trained educators in selected environmental education institutions within each region, to serve as catalytic focal points for environmental education.

Approved project

FP/3101-88-01 International Environmental Education Programme Phase VI (Unesco).

FP/9101-87-89 Support to the South Pacific Regional Environmental Programme (SPREP) for Improved Environmental Education, Training and Information in the South Pacific Island States (SPC).

FP/3102-87-08 Environmental Management Training for Employers in selected developing countries (ILO).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

3101 ENVIRONMENTAL EDUCATION AND TRAINING

Proposed activity (UNEP/GC.14/16)

3. Programmes of environmental awareness for pre-school and primary school children (UNICEF, NGOs; 1980).

Output: environmental games and environmental education magazines for pre-school and early primary school children in a further five countries.

4. Development of regional networks of environmental training institutions.

Output: further development of regional training networks for Latin America and the Caribbean, West Asia, Africa, Asia and the Pacific; the networks will co-ordinate training and serve for the exchange of information and methodologies. At least one leading institution (centre of excellence) in each developing region will become operational. 5,000 technical people will be trained in environmental fields through the networks.

5. Incorporation of environmental components into training programmes for decision makers and professionals.

Output: 1,000 trainees in priority areas. Key professionals trained in dealing with the environmental dimension of their work. New training materials developed and transferred to other potential users.

6. Support for training components of projects in other areas of the Programme.

Output: 500-600 trained specialists associated with technical projects in UNEP's programmes (e.g. Water, Soils, Oceans, Desertification, Environmental law, and Health). Production of training materials for transferrable use.

Approved project

FP/9101-86-93 UNEP Support to TVE and OUTREACH Project (TVE).

FP/CP/3102-86-02 Support to Regional Co-operative Project for the Implementation of the Environmental Training Network for Latin America and the Caribbean (Direct).

FP/3102-87-03 ASIA-PACIFIC Network for Tertiary level Environmental Training - Phase I (Direct).

FP/3102-87-04 WEST ASIA Network for Tertiary Level Environmental Training - Phase I (Direct).

FP/3102-87-05 AFRICA Network for Tertiary level Environmental Training - Phase I (Direct).

FP/CP/9101-87-87 Environmental Awareness Building Workshops for Personnel of African Ministries of Planning, Environment and Education (Direct).

FP/3101-89-01 Training course on environmental management for industrial managers and engineers (UNEP/COM, UNIDO, Tampere University, Finland).

FP/3102-86-01 International Post-graduate course in ecological approaches to resources development, land management and impact assessment in developing countries - Phase II (Unesco and GDR).

FP/3102-87-06 International Training Course on Geological Aspects of Environmental Protection (Unesco, UNEP/COM).

FP/9101-87-86 Training Course on Environmentally sound Management of Water Resource in East Africa (IHE).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

3101 ENVIRONMENTAL EDUCATION AND TRAINING

Proposed activity (UNEP/GC.14/16)

Approved project

7. Promotion of non-formal environmental education activities for adults.

Output: incorporation of environmental education into non-formal adult education in at least three countries per developing region.

8. Introduction of environmental components in training programmes for employers, technicians and trade unionists.

Output: 350 trainees to serve as trainers and promoters of environmental concepts, and their application; training materials.

FP/RA/3101-87-02 Co-ordination of the Contribution of Youth to Sustainable Development (Direct).

FP/9101-87-89 Support to the South Pacific Regional Environmental Programme (SPREP) for improved environmental education, training and information (SPC).

FP/9101-87-92 Promotion of environmentally sound management of lakes (ILEC).

FP/9101-85-01 Support to the XIV International Conference "PACEM IN MARIBUS" (UNEP/COM).

FP/3101-84-01 Regional Workshop for the development and production of Instructional Manual for Environmental Education in Africa (UNEP/African Association for Literacy and Adult Education).

FP/3102-87-08 Environmental Management Training for Employers in selected developing countries (ILO).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

3103 PUBLIC INFORMATION

278

Proposed activity (UNEP/GC.14/16)

1. Co-ordination of development and production of environmental information materials for use by agencies of the United Nations system and for significant target groups.

Output: identification of target audiences; information on developments and events of particular concern; co-production of information materials on major environmental issues with other United Nations agencies.

2. Production of:

(a) UNEP News; The Siren;

(b) Publications (UNOG and UNEPCOM);

(c) Audio-visual materials (TVE);

(d) Information material for World Environment Day and other international events.

Output: production of UNEP News; and The Siren, in English, French and Spanish; production in various languages of approximately 20 publications; the exhibits and displays; 20 radio programmes and interviews, 6 video programmes in Arabic, English, French, and Spanish, film catalogues; media kits for World Environment Day and other international events.

3. Regional information support activities.

Output: six newsletters issued quarterly, bi-monthly or monthly; environmental news clippings (6 services); press releases, features.

Approved project

FP/RA/3103-86-06 Co-ordination of UNEP Publications - Phase III (Direct).

FP/9101-89-82 Co-ordination of Information and Public Affairs activities (Direct).

RA/3103-86-12 Development of UNEP's Environmental Outreach Programme - Phase I (Direct).

FP/3103-86-05 Co-ordination of audio-visual activities as support to UNEP's programme (Direct).

FP/3103-88-01 World Environment Day 1988 (Direct).

FP/3103-88-05 World Environment Day 1989 (Direct).

FP/9101-86-93 Support to the Television Trust for the Environment (TVE).

FP/9101-87-94 Asia-Pacific environmental music festival for world environment day 1988 (Direct).

FP/3103-88-03 Regional Information Support Programme (Direct).

FP/3103-88-04 Publication and Information Support Programme in the People's Republic of China (NEPA).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

3103 PUBLIC INFORMATION

Proposed activity (UNEP/GC.14/16)

4. Production and distribution of information materials in various languages.

Output: increased co-ordination and participation of NGOs in the dissemination of information on UNEP and the environmental impact of development projects; co-ordination of NGOs activities to WED events.

5. Media support programme.

Output: coverage of environmental issues by the world's media; more environmentally informed media personnel, and greater awareness of UNEP's objectives, achievements; establishment of media networks in specific regions.

Approved project

FP/3103-86-11 Support for Ecoforum (ELC).

FP/3103-86-10 Publications and information support programme in USSR - Phase II (UNEPCOM).

FP/3103-86-07 News and Data Team (Direct).

FP/3103-87-01 UNEP/IPS Information Programme: Latin America and the Caribbean (IPS).

FP/3103-88-02 Press Foundation of Asia: Media Programme Phase V (PFA).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

2105 ENVIRONMENTAL LAW AND MACHINERY

Proposed activity (UNEP/GC.14/16)

Approved project

1. Preparation and implementation of international agreements and principles as follow-up to the Montevideo Conference.

Output: Entry into force of the Vienna Ozone Convention and adoption of a protocol on CFCs; principles on environmental impact assessment; draft conventions for environmental management of international water systems, preparation of agreements, guidelines and preparatory documents on soil conservation, environmental emergencies, and prevention and redress of pollution damages, to be used by Governments and international organizations in preparing national legislation and international agreements. Outputs will also include the 1989 edition of the "Register of international treaties and other agreements in the field of the environment".

2. Environmental legislation in CMEA countries.

Output: compendium of environmental legislation for use as a reference source and preparation of educational materials for developing countries.

3. Technical assistance to developing countries for the improvement of environmental legislation and machinery.

Output: effective environmental legislation and machinery in developing countries.

FP/CP/2105-81-03 Meeting of ad hoc working group of legal and technical experts for the elaboration of global framework convention on the protection of the ozone layer (Direct).

FP/2105-86-02 Development and periodic review of Environmental Law - (Montevideo Programme - Phase II) (Direct).

FP/2105-89-03 Support to the interim Secretariat for the implementation of the Vienna Convention and the Montreal Protocol on substances that deplete the ozone layer (Direct).

FP/2105-87-01 Environmental Legislation in CMEA countries - Information transfer to Developing Countries (UNEP/COM).

FP/8201-85-02 Regional Programme PR-5 on development of environmental legislation and institutional framework in Latin America and the Caribbean (Direct).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

2101 ENVIRONMENTAL ASPECTS OF DEVELOPMENT PLANNING AND CO-OPERATION

Proposed activity (UNEP/GC.14/16)

Approved project

1. Integrated physical, socio-economic and environmental planning.

Output: case-studies from Japan (1986-1987) and the CMEA countries (1988-1989) with the focus on integrated physical planning for reconciling economic, social and environmental concerns. The studies are to be used in training personnel from developing countries and in technical co-operation, and for a better information exchange and improved co-operation between the centrally-planned and market economies.

2. Promotion of environmental impact assessment and social cost-benefit analysis methodologies applied to development projects/programmes.

Output: executive management guidelines, technical manuals and case-study analyses for dissemination, to be used in training workshops and courses, in technical co-operation and as publications, as well as in technical co-operation with Jamaica and Zambezi Basin countries.

3. Strengthening of institutional capabilities to integrate environmental considerations in development policy and planning.

Output: demonstration of the feasibility of inter-departmental co-ordination of governmental policies and mutual support between sectoral programmes. Establishment of mechanisms for ascertaining the socio-economic significance of changes in the environment and

FP/2101-81-05 Methodology and Case Studies on Socio-Economic Evaluation of Natural Resources Conservation and Use in Planned Economies (UNEP/COM).  
FP/2101-82-06 Environmental Accounting and its use in development policy and planning (Internal).

FP/2101-84-01 Integration of Conservation Objectives in Development Projects: Demonstration and Guidelines (IUCN).

FP/2101-87-04 Development of Institutional Capabilities in Jamaica: Environmental Management of Hope River Watershed (Government of Jamaica).

FP/2101-85-02 Application of Economic Analysis to degradation and Rehabilitation of Drylands: Conference, Guidelines, Case studies and Training (Government of Australia).

FP/2101-87-01 Senior Level Workshop to Strengthen Application of EIA in Development Decision Making in SACEP countries (Direct).

FP/2101-87-02 Consideration of the Environment in Development Planning in Bhutan - Phase I (Government of Bhutan).

FP/9101-87-93 Technical co-operation for integration of environmental considerations in development planning in Latin America and the Caribbean: Phase II (UN ECLAC).

การตรวจประเมินผลกระทบสิ่งแวดล้อม (EIA) เป็นเครื่องมือสำคัญในการประเมินผลกระทบของโครงการพัฒนาที่มีต่อสิ่งแวดล้อมและสุขภาพของชุมชน การประเมินผลกระทบสิ่งแวดล้อมช่วยให้ผู้ตัดสินใจสามารถเข้าใจผลกระทบที่อาจเกิดขึ้นและหาแนวทางเพื่อลดผลกระทบที่ไม่พึงประสงค์ได้ การประเมินผลกระทบสิ่งแวดล้อมยังช่วยให้โครงการพัฒนาสามารถดำเนินไปอย่างยั่งยืนและสอดคล้องกับนโยบายการพัฒนาที่ยั่งยืนของประเทศไทย

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

282

2101 ENVIRONMENTAL ASPECTS OF DEVELOPMENT PLANNING AND CO-OPERATION

Proposed activity (UNEP/GC.14/16)

4. Promotion of training in the integration of environment and development.

Output: (a) curricula and course materials for application of analytical methods to considering the environment in project and programme appraisal;  
(b) training of planners, project analysts and decision makers in considering the environment in development;  
(c) wide dissemination of outputs to ensure broad-based applications and multiplier effects.

5. Monitoring environmental aspects of development assistance.

Output: (a) better information on and co-ordination of policies and procedures for considering the environment in development financing  
(b) increased allocation of aid to environmental rehabilitation and improvement.

6. Demonstration of an integrated approach to people, resources, environment and development.

Output: (a) information network in the Himalayan region;  
(b) case-study analyses of successful projects;  
(c) analytical reports on changes in the environment and development with emphasis on people-environment-development interactions.  
Outputs to be used for improved environmental management of fragile ecosystems under population pressure.

Approved project

FP/2101-87-03 Training workshop in the Application of Methods to Integrate Environmental Considerations in National Development Planning (UNEPCOM).

FP/2101-87-05 Regional Training Seminar on the Application of Environmental Impact Analysis in the Appraisal of Development Projects (Padjadjaran University).

FP/2101-88-02 Arab Expert Workshop on Designing a Regional Training Programme for Integration of Environmental Considerations in Development Planning (Arab Planning Institute, Kuwait, in association with the Arabian Gulf University, Bahrain).

FP/2102-82-03 Secretariat for the Committee of International Development Institutions for the Environment (CIDIE) (Direct).

FP/2101-88-01 Paper on Sustainable Food Security as Basis of a UNEP/WFC Presentation to Fourteenth Session of the World Food Council (Direct).

FP/2101-89-01 Expert consultations on the feasibility of additional means of financing environmental management activities in developing countries (WRI, Washington, D.C.).

FP/2101-88-03 Consideration of the environment in development planning and administration in Nepal (Direct).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

2101 ENVIRONMENTAL ASPECTS OF DEVELOPMENT PLANNING AND CO-OPERATION

Proposed activity (UNEP/GC.14/16)

7. Application of economic instruments to promote environmentally sustainable development.

Output: analysis and guidance on economic policy instruments to bring about sustainable development. Outputs to be used in

(a) technical co-operation for the establishment of policy instruments in selected countries;

(b) technical co-operation among developing countries.

8. Incorporation of environmental considerations in international trade and investments.

Output: analysis of success stories, guidelines and model agreements on environmentally responsible transnational investments; frameworks of trade negotiations to reflect international environmental co-operation; assistance to developing countries in meeting the environmental standards of importing countries.

9. Support to strengthen sustainable development orientation in sectoral environment programmes.

Output: pilot projects aimed at environmental and developmental objectives based on application of environmental impact assessment, cost-benefit analysis and integrated physical planning measures. Use in bilateral and multilateral technical co-operation and strengthened national institutional capabilities.

Approved project

FP/RA/2101-88-04 Planning for environmentally sound and sustainable development, system-wide action at the country level (Direct).

FP/9101-87-93 Technical co-operation for integration of environmental considerations in development planning in Latin America and the Caribbean: Phase II (UN ECLAC).

Structural Adjustment, Economic Reform and Environmental Management: the Case of Malawi study prepared with PPSC support.

Discussions with GATT and UNCTAD were held but neither agency was prepared to undertake a joint activity on the subject: GATT's technical barriers to trade framework provides a mechanism for countries to make trade-related representations. Developing countries have not made such representations on environmental grounds.

UNCTC following mandate from its Governing body and ECOSOC has developed in consultation with UNEP a programme.

FP/9101-87-93 Technical co-operation for integration of environmental considerations in development planning in Latin America and the Caribbean: Phase II (UN ECLAC).

CP/2101-82-03 Formulation of programmes and projects for meeting the most serious environmental problems of developing countries (Internal).

EM/CD/CP/8201-89-03 Technical co-operation to assess environmental problems and to strengthen environment related policies, planning and institutions in developing countries, Phase I (Internal).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

8201 TECHNICAL AND REGIONAL CO-OPERATION

284

Proposed activity (UNEP/GC.14/16)

1. Support for regional and liaison offices of UNEP.  
Output: technical assistance for environmentally sound development and environmentally sound training.

2. Support for the preparation of national state-of-the-environment reports.

Output: national state of the environment reports prepared by developing countries with the assistance of UNEP.

3. Support for regional activities under:

(a) Cairo Programme for African Co-operation.

(b) Latin American and the Caribbean regional environmental programmes.

(c) Subregional environmental programmes of SACEP, ASEAN and the South Pacific Plan of Action.

Approved project

FP/8201-87-51 Provision of Regional Advisory Services and Fellowships - Africa (Direct).

FP/8201-87-52 Provision of Regional Advisory Services and Fellowships Asia and the Pacific (Direct).

FP/8201-87-53 Provision of Regional Advisory Services and Fellowships Latin America and the Caribbean (Direct).

FP/8201-87-54 Provision of Regional Advisory Services and Fellowships Western Asia (Direct).

FP/8201-87-55 Provision of Advisory Services and Fellowships Europe (Direct).

FP/8201-87-56 Provision of Regional Advisory Services and Fellowships New York Liaison Office (Direct).

FP/8201-85-03 The State of the Environment in some Developing Countries (Direct).

CP/RA/FP/9101-88-81 Implementation of the African Programme of Action on the Environment - Phase II.

FP/8201-89-07 Action Plan for the Environment in Latin America and the Caribbean.

FP/8201-85-02 Regional Programme (PR-5) on Development of Environmental Legislation and Institutional Framework in Latin America and the Caribbean (Direct).

MH/8201-87-01 Establishment of a Network for Industrial Environmental Management (NIEM) - Phase 4 (Direct).

MH/8201-89-04 Establishment of a network for Industrial Environmental Management - Phase II (Direct).

IMPLEMENTATION OF UNEP PROGRAMME 1988-1989  
(as at 31 December 1989)

8201 TECHNICAL AND REGIONAL CO-OPERATION

Proposed activity (UNEP/GC.14/16)

(d) Plan of Action of the Arab Ministerial Conference on Environment and Development (October, 1986).

(e) Environmental programmes of regional commissions developed in consultation with the regional offices of UNEP.

Output: programmes at national, subregional and regional levels to address environmental priorities identified by Governments. Technical co-operation among countries. Institutional capabilities and skill formation.

4. Technical co-operation with and among developing countries to meet their environmental needs.

Output: demonstration projects on replicable methodologies related to environment and development, implemented with the support of the Clearing-house mechanism.

Approved project

FP/8201-84-01 Strengthening of UNEP's Co-operation with the League of Arab States and the Arab League's Educational, Cultural and Scientific Organization (ALECSO) (Direct).

MH/8201-87-01 Establishment of a Network for Industrial Environmental Management (NIEM) - Phase 4 (Direct).

FP/8201-85-01 Technical Co-operation for Integration of Environmental Considerations in Development Projects and Programmes in Latin America and the Caribbean (UN ECLAC).

FP/9101-87-93 Technical co-operation for integration of environmental considerations in development planning in Latin America and the Caribbean - Phase II (ECLAC).

EM/CD/CP/8201-89-03 Technical Co-operation to Assess Environmental Problems and to Strengthen Environment Related Policies, Planning and Institutions in Developing Countries, Phase I.

FP/8201-83-01 Strengthening of specialist training programme in the management of renewable resources in the Andean area.

CD/8201-87-02 Technical Co-operation Trust Fund to Provide Consultancies to Developing Countries Financed by Government of Finland (Internal).

FP/9101-85-98 Environmental Management of Hope River watershed (Government of Jamaica).



UNEP

United Nations Environment Programme

# 1989 **ANNUAL REPORT**

**of the Executive Director**

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Nairobi, 1990