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THE ENVIRONMENT PROGRAMME: PROGRAMME PERFORMANCE REPORT

Report of the Executive Director

The present document reports on significant progress or achievements that have taken place between May and end December 1980 in the implementation of the environment programme. Achievements between January and April 1981 will be described in document UNEP/GC.9/5/Add.5.

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ABBREVIATIONS

ACC	Administrative Committee on Co-ordination
ALECSO	Arab League Education, Scientific and Cultural Organization
ASEAN	Association of South-East Asian Nations
CARICOM	Caribbean Community Secretariat
CCFA	Codex Committee on Food Additives
CCFH	Codex Committee on Food Hygiene
CCPR	Codex Committee on Pesticide Residues
CEC	Commission of the European Communities
CPPS	Permanent Commission for the South Pacific
CSC	Commonwealth Science Council
ECA	Economic Commission for Africa
ECE	Economic Commission for Europe
ECLA	Economic Commission for Latin America
ECO	Pan-American Centre for Human Ecology and Health
ECU	Environmental Co-ordination Unit
ECWA	Economic Commission for Western Asia
EEC	European Economic Community
ELC	Non-governmental Organizations' Environment Liaison Centre
EMEP	European Monitoring and Evaluation Programme
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations
GEMS	Global Environmental Monitoring System
IAEA	International Atomic Energy Agency
IARC	International Agency for Research on Cancer
IBPGR	International Board for Plant Genetic Resources

ICIPE	International Centre for Insect Physiology and Ecology
ICSU	International Council of Scientific Unions
IFAD	International Fund for Agricultural Development
IFIAS	International Federation of Institutes for Advanced Study
IGOSS	International Global Ocean Stations System
IIASA	International Institute for Applied Systems Analysis
IIED	International Institute for Environment and Development
IITA	International Institute of Tropical Agriculture
ILO	International Labour Organisation
IMCO	Inter-Governmental Maritime Consultative Organization
INFOTERRA	International Referral System for sources of environmental information
IOC	Intergovernmental Oceanographic Commission
IPCS	International Programme on Chemical Safety
IRPTC	International Register of Potentially Toxic Chemicals
ISSS	International Society of Soil Sciences
IUCN	International Union for the Conservation of Nature and Natural Resources
IUFRO	International Union of Forestry Research Organizations
IVL	Swedish Air and Water Research Institute
IWC	International Whaling Commission
IWRB	International Waterfowl Research Bureau
MAB	Man and the Biosphere Programme
MARC	Monitoring and Assessment Research Centre
MARPOLMON	IOC/WMO Marine Pollution Monitoring Programme
MEDEAS	Centre d'activités développement environnement en Méditerranée
MIRCENS	Microbiological Research Centres for Developing Countries

OAS	Organization of American States
OAU	Organization of African Unity
OECD	Organization for Economic Co-operation and Development
PAHO	Pan-American Health Organization
SCOPE	Scientific Committee on Problems of the Environment
SEPA	Science Education Programme in Africa
SIDA	Swedish International Development Authority
SPC	South Pacific Commission
SPEC	South Pacific Bureau for Economic Co-operation
UNCHS	United Nations Centre for Human Settlements (Habitat)
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Co-ordinator
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
UNSO	United Nations Statistical Office
WFC	World Food Council
WFP	World Food Programme
WHO	World Health Organization
WMO	World Meteorological Organization

INTRODUCTION

1. The programme performance report and its addenda present significant progress or achievements in the implementation of the approved workplans and decisions of the Governing Council in the field of the environment.

2. Unlike previous programme documents, for example UNEP/GC.7/7 and UNEP/GC.8/5, which contained several sections - problem addressed, authority, progress report, urgent needs, workplans, etc. - on each subject, this document consists only of progress reports on the subjects that constitute the environment programme. While the presentation is as concise as feasible, an effort is also made to provide as much information as possible, focusing on results, recommendations and the impact, success or otherwise of the activities reported upon. In the case of the implementation of specific decisions of the Governing Council, the progress made and difficulties encountered are indicated.

3. The contents are arranged under the four chapter headings used in document UNEP/GC.8/5 - Assessment, Subject areas, Supporting measures and Environmental management including environmental law. The presentation is thus slightly different from that of the medium-term plan for 1982-1983 (UNEP/GC.9/6) which has three chapters, Environmental assessment, Environmental management and Supporting measures.

Chapter I

ENVIRONMENTAL ASSESSMENT

A. THE GLOBAL ENVIRONMENTAL MONITORING SYSTEM (GEMS)
(budget sub-line 1301)

I. Resource monitoring

4. The detailed results of the UNEP/FAO pilot project on tropical forest cover monitoring in Benin, Togo and United Republic of Cameroon 1/ have been published (a report for each of the three West African countries involved 2/, together with an over-all summary report by the project co-ordinator 3/). The reports include completed maps of each country's forest resources and estimates of changes in cover over recent years. The monitoring methodology employed was a combination of ground work, low-level reconnaissance flights, conventional aerial photography and Landsat imagery. General conclusions confirm that loss of forest cover is related to population density.

5. Data collection for the UNEP/FAO world-wide assessment of tropical forest resources 4/ has terminated, and the final draft country-level statements for the Latin America, Africa and Asia regions are complete. The survey made use of all information and documentation available, supplemented and verified whenever possible, or replaced where necessary, by satellite imagery analysis. The assessment is a preliminary overview at relatively small scale. It will provide a firm foundation for a continuing series of assessments which will increase in detail as monitoring information accumulates.

6. A report which describes a framework methodology for the assessment of soil degradation and provides guidelines for field activities 5/ has been published, together with six maps (1:5,000,000) indicating both the actual degradation and the risks of degradation in Africa north of the equator and in the Middle East. Some of the maps have been subjected to a computer enhancement compilation and display process which has produced useful integration of the data as well as a visual output.

7. The UNEP/FAO pilot project for the inventory and monitoring of Sahelian pastoral ecosystems 6/ completed its first systematic reconnaissance flight of the 30,000 km² rangeland study area in October 1980. Preliminary results were available within a few days of the survey, and the Government of Senegal now has livestock and habitat information at a scale and at a level of detail which is unprecedented in the region.

1/ FP/1101-75-05.

2/ UNEP/FAO, UN 32/6.1102-75-05, Rapports techniques 1-3 (FAO, Rome, 1980).

3/ UN 32/6.1102-75-05. Project Report No. 4, (FAO, Rome, 1980).

4/ FP/1301-78-04.

5/ UNEP/FAO/UNESCO (1979). A provisional methodology for soils degradation assessment. (FAO, Rome, 1980).

6/ FP/1301-79-01.

8. Fifty-eight technical experts and policy-makers from 48 institutions in 12 Arab countries participated in the Seminar on Environmental Monitoring for the Arab World (Aman, 26-30 October 1980), co-sponsored by the Arab Development Institute, the Federation of Arab Scientific Research Councils, the Royal Scientific Society of Jordan and UNEP. The Seminar's recommendations call for the establishment of national centres for the environment to initiate monitoring activities and exchange technical information throughout the Arab region, giving priority attention to desertification and oil pollution monitoring; urge that a regional centre for remote sensing be established; and stress the need for an environmental information exchange network and introduction of environmental matters into the Arab education systems.

9. The IUCN Conservation and Monitoring Unit in Cambridge, United Kingdom is now fully operational, and is developing an interactive species and habitat data base which will be considered for inclusion within GEMS. UNEP is maintaining a close dialogue with and providing advice to the Unit.

10. A training seminar on remote sensing for geology and hydrology was held in co-operation with the Soviet Government and the Outer Space Affairs Division of the United Nations (Baku, USSR, November 1980) for participants from 17 countries. Lectures by Soviet experts and practical classes explored the use of satellite data for resource assessment and monitoring.

2. Climate-related monitoring

11. The UNEP/WMO climate-related monitoring project, initiated in 1980, 7/ consists of eight subprojects: continuation and extension of current background air pollution monitoring (BAPMoN) activities; monitoring of the earth's heat budget; monitoring of the cryosphere; monitoring of physical and thermal ocean characteristics; monitoring of volcanic effects on the atmosphere; development of the use of meteorological satellite; investigations of historical and proxy data; and development of climatological data management systems.

12. A preliminary evaluation of WMO/UNEP precipitation chemistry data 8/ collected during the 1972-1976 operation of BAPMoN, published by MARC, concludes that BAPMoN provides a good picture of the distribution of sulphates and nitrates over Europe and North America, when compared to earlier records: the data indicate that sulphates in precipitation over Europe have increased since the 1950s by as much as 50-100 per cent. Additional analysis of BAPMoN air turbidity and precipitation chemistry data is being undertaken by independent scientists. The preliminary results have been submitted to the WMO Executive Committee's Panel on Environmental Pollution, and further results, including analyses of CO₂, are expected by mid-1981. The 1977 BAPMoN data on selected atmospheric turbidity and precipitation chemistry variables have been published as part of the series begun in 1971 (Global Monitoring of the Environment for Selected Atmospheric Constituents, 1977).

7/ FP/1301-80-01.

8/ Wallen, C.C. A Preliminary Evaluation of WMO/UNEP Precipitation Chemistry Data, MARC Report No. 22 (MARC, London, 1980).

13. Under the seventh sub-project an International Dendroclimatology Workshop (University of East Anglia, Norwich, United Kingdom, July 1980) considered the state of the art of dendrochronology as a source of climatological proxy data. The proceedings will be available in mid-1981.

3. Health-related monitoring

14. Five health-related monitoring projects are currently under way: air quality monitoring, global water quality monitoring, food and animal feed contamination monitoring, biological monitoring and assessment of exposure to air pollution:

(a) Air quality monitoring

At the end of 1980, the number of stations included in the project had stabilized at approximately 200 in 50 cities. A report containing the data for 1977-1978 is in the press. WHO has published a guide for analysing and interpreting air monitoring data, 9/ which presents examples from the network and shows the ways in which the data may be used to protect human health and to foster standardization of the methodologies used;

(b) Global water-quality monitoring

By the end of 1980, some 250 stations in 40 countries had been enlisted in the project; 100 of them in 25 countries had already contributed data. Training courses/workshops were organized in West Africa, Latin America (on quality assurance) and China. The Japanese Institute of Public Health has agreed to serve as a regional quality assurance centre, and the United States Environmental Protection Agency Laboratory in Cincinnati is prepared to analyse samples for the entire programme. The Centre for Inland Waters of Canada continues to handle the data arising from this project;

(c) Food and animal feed contamination monitoring

Under the FAO/WHO programme on this subject, 10/ data received from 21 participating countries up to July 1980 have been summarized, and a report will be issued early in 1981. A UNEP/WHO meeting on quality assurance led to the first inter-laboratory comparison study for selected metals, pesticides and aflatoxins in certain foods, and to the preparation of a basis for a food and animal feed classification system. Guidelines on food contamination intake are also being drafted by FAO;

(d) Biological monitoring

This project has two components, on metals and on organochlorine compounds. With the addition of China, the number of countries participating in the project rose to 10 for each component. Work in 1980 focused on improving quality

9/ Analysing and Interpreting Air Monitoring Data, WHO Offset Publication No. 51, (WHO, Geneva, 1980).

10/ FP/1301-76-03.

control and enhancing laboratories' capabilities for conducting the analyses. Meetings were held to review the quality control results for both components and to plan for the actual monitoring phase which will begin during 1981;

(e) Assessment of human exposure to air pollution

Preliminary investigations were carried out to select additional locations in South America and South-east Asia, in addition to sites in the three countries initially participating (Canada, China and Yugoslavia). Work in Canada and Yugoslavia is well under way, with final reports expected in 1981. A draft guideline on health-related air monitoring is currently being finalized.

4. Long-range transport of pollutants 11/

15. A summary report on the first phase of EMEP was submitted by the Chemical Co-ordinating Centre and two Meteorological Synthesizing Centres to the Steering Body of the Programme. 12/ An inventory of sulphur emissions in Europe was prepared, based on information received from the 16 countries concerned, in which samples are being collected at 60 stations. Five inter-laboratory tests have been conducted at regular intervals. Reasonable agreement between the measured chemical data and data calculated from meteorological dispersion models has been observed. The calculations suggest that, in most European countries, a significant part of the sulphur burden is of foreign origin.

5. Ocean monitoring

16. The third IOC/WMO Workshop on Marine Pollution Monitoring (New Delhi, February 1980) 13/ evaluated the scientific results of open ocean monitoring, including those of the IGOSS pilot project, 14/ which is now completed, and processed more than 100,000 visual observations of oil slicks from 1975 to 1978. Though it was difficult to draw quantitative conclusions from them, the observations indicated that the most polluted areas were the Red Sea, the Strait of Malacca, the Mediterranean and Caribbean Seas and the South China Sea, which are crossed by shipping routes with a dense tanker traffic. Based on the results of tarball counts, on the other hand, the most polluted areas are those off the North-west African coast, the Sargasso Sea, the sea around Japan and the Bay of Cadiz. On the basis of both visual observations and of tarball counts, the Atlantic ocean north of the Gulf Stream is relatively unpolluted by petroleum hydrocarbons, and this is also true of the North Sea and the Baltic, where ship traffic is very dense but oil discharge is strictly prohibited. The Workshop recommended that the most reliable techniques (e.g. beach tar measurements, floating tarball collection) be included in the planned IOC/WMO MARPOLMON programme. It stressed that more activities by developing countries are required, that inter-comparability of methods should be improved, and that global assessments of marine pollution are needed. Specific recommendations were made to include new substances in future monitoring (e.g. polycyclic

11/ FP/1301-77-02, FP/1301-78-05, FP/1301-79-02.

12/ ENV/WP.1/GE.1/r.11.

13/ IOC Workshop report No. 22.

14/ FP/1301-78-02.

aromatic hydrocarbons), to examine the sea surface microlayer, to sample at greater depths (including bottom sediments), and to increase the use of remote sensing techniques. The Workshop considered trace element and chlorinated hydrocarbon monitoring not to be currently practicable on a global basis (see the section on marine pollution (para. 109) which outlines recommendations for pilot studies of these compounds). Requirements for training, education and mutual assistance were discussed, and the institutional arrangements for future monitoring under MARPOLMON formulated.

6. Research and development

17. The GEMS activities with the Monitoring and Assessment Research Centre, Chelsea College continue. Eight additional publications have been issued in the MARC Report Series. 15/

7. In-depth review of Earthwatch 16/

18. The following topics were identified as being important subjects for intense assessment activities over the next few years:

(a) Renewable natural resources: soil degradation; desertification (perhaps considered together); tropical and temperate forest cover; shifting cultivation in the humid tropics; loss of cropland; tropical rangelands; selected species and habitats; the results to date of the renewable resource monitoring programme;

(b) Climate: climate variability and CO₂; ozone depletion; the results of the climate-related monitoring programme;

(c) Environmental agents: long-range transport of pollutants; acid rains; toxicity evaluations under IPCS; pollutants in regional seas; the results of the health related monitoring programme.

15/ O'Brien, B.J., Smith, S., Coleman, D.O., Lead Pollution of the Global Environment, MARC Technical Reports Nos. 15-18; Draggan, S. The Microcosm: Biological Model of the Ecosystem, MARC Technical Report No. 19; Piotrowski, J.K., Coleman, D.O., Environmental Hazards of Heavy Metals: Summary Evaluation of Lead, Cadmium and Mercury, MARC Technical Report No. 20; Khan, D.H., Lead in the Soils Environment, MARC Technical Report No. 21; Wallen, C.C. A Preliminary Evaluation of WMO-UNEP Precipitation Chemistry Data, MARC Technical Report No. 22.

16/ UNEP Report No. 1 (1981).

B. INFOTERRA
(budget sub-line 1302)

19. The INFOTERRA network has continued to expand, as shown in the following table:

Date	Number of participating Governments	Number of countries with sources registered	Number of registered sources	System-wide queries per month
GC.6	87	48	5,000	150
GC.7	94	63	7,100	150
GC.8	107	68	7,800	200
31.12.80	112	76	8,400	350

Six new partner countries joined INFOTERRA and eight more countries submitted sources for registration. Six hundred new sources were added to the INFOTERRA Directory, and the monthly use rate has increased to 350 as a result of an extensive promotion effort undertaken by the Programme Activity Centre and national focal points during 1980 and continuing into 1981. The participation of South Africa in INFOTERRA ceased as a result of Governing Council decision 8/3 of 28 April 1980.

20. Regional INFOTERRA management meetings for the Western European region (Dublin, 27-29 May 1980) and for the Asia and the Pacific region (Dalian, China, 13-15 August 1980) helped consolidate INFOTERRA activities in the two regions and further strengthened regional co-operation in environmental information exchange.

21. The Dublin meeting was attended by national focal point managers from six Western European countries, as well as by representatives of CEC and the INFOTERRA Programme Activity Centre. The participants agreed, among other things, to make special efforts when registering sources to include centres of excellence in the environmental field; to consider the possibility of expanding INFOTERRA services to include document delivery and on-line access; and to give immediate attention to the provision of materials for promotion of INFOTERRA. The meeting noted the proposed development within the United Nations system of a number of new referral systems which if implemented, could involve duplication of INFOTERRA activities, in particular in relation to source registration, and suggested that UNEP, as the co-ordinator of the only operational international referral system for environmental information, should ensure that duplication is avoided, particularly with regard to human settlements activities.

22. The recommendations of the Dalian meeting, which was attended by staff from 12 focal points in the Asia and Pacific region, from Australia, dealt inter alia with bilateral exchanges among focal points in the region in computer systems training and hardware selection, as well as assistance in computer searches; co-operation with national library associations and similar bodies in promoting the use of INFOTERRA; preparation as a first step in providing document delivery service through INFOTERRA of a directory of abstracts of major publications produced by INFOTERRA sources in each country; and notification to the model focal point in the region of the priority environmental problems and the areas of greatest environmental expertise in each country and of all documents translated through the use of INFOTERRA, thereby increasing the potential use of the document; etc.

23. Training courses for national focal point staff were organized at Dakar (April 1980) and New Delhi (July 1980). The Dakar training course was attended by technical-level focal point staff from eight French-speaking countries, and provide practical training in all aspects of INFOTERRA operations, as well as a general introduction to information-handling techniques. The New Delhi course offered similar training to focal point staff from 14 English-speaking countries. The training provided at these courses will enable the participants to initiate or further expand INFOTERRA activities in their countries.

24. As part of the network development programme, INFOTERRA staff or consultants visited 24 countries and provided consultancy services to national focal points on specific problems relating to INFOTERRA operations.

25. Close co-operation was maintained with all other UNEP information activities, such as IRPTC, the Environmental Data Unit and the information systems of the Industry and Environment Office. This has resulted in certain joint activities such as a joint paper by INFOTERRA, IRPTC and the Industry and Environment Office presented at the International Conference on Delivery Mechanisms for Engineering and Technological Information (Budapest, 3-5 November 1980).

26. A network-wide evaluation was conducted by a team of six independent evaluators led by a team leader. A summary of the findings is contained in UNEP Report No. 1 (1981). The summary of the recommendations, the full text of which appears in the evaluation report, is as follows:

(a) Future strategy

- (1) It is recommended that INFOTERRA activities continue to be supported by UNEP;
- (2) The INFOTERRA network should move beyond referral towards provision by focal points on a decentralized basis, of some substantive information;
- (3) INFOTERRA national focal points should be grouped in regions, with one focal point in each group acting as regional centre for resource-sharing purposes;

- (4) Ways should be sought to improve communications within the INFOTERRA network;
- (5) Centres with particular expertise should be designated as INFOTERRA sectoral focal points;

(b) Promotion of INFOTERRA

- (6) Increased effort should be devoted by the network to promoting the use of INFOTERRA;
- (7) Promotional activities should be undertaken in co-operation with other United Nations organizations and agencies;
- (8) INFOTERRA services should be promoted through librarians and information workers;
- (9) UNEP and other United Nations organizations and agencies should make greater use of INFOTERRA;
- (10) Libraries and documentation centres should be given the opportunity to purchase the INFOTERRA Directory;
- (11) Newly registered INFOTERRA sources should be requested to put a trial question to INFOTERRA, in order to encourage sources to make active use of the system;

(c) National focal points

- (12) Governments designating focal points should provide adequate resources to ensure their effective and full functioning;
- (13) National focal points should generally be located in or near environmental information services, and Governments should review focal point performance regularly;
- (14) National focal points should be encouraged to build up or ensure access to environmentally-related document collections;
- (15) National focal points should maintain closer contact with their sources and users, possibly by issuing newsletters and national directories;
- (16) Regional and global meetings of the INFOTERRA network should be continued;
- (17) Focal points should submit to the Programme Activity Centre brief annual reports on their progress;

(d) The Programme Activity Centre

- (18) The Programme Activity Centre staff should include, preferably by addition, two experienced information scientists to advise and assist the network in developing the recommended capacity for delivery of substantive information;

- (19) The Programme Activity Centre should be given improved access to environmental information tools, including indexing and abstracting journals and online services;
- (20) The Programme Activity Centre, in co-operation with relevant United Nations agencies, should offer basic training in information-handling procedures to focal point staff;
- (21) The access of focal points to UNEP and other environmentally-related United Nations documents should be improved;
- (22) Occasional guides to sources of bibliographic information and documents in the environmental field should be produced by the Programme Activity Centre;
- (23) The INFOTERRA Bulletin should be continued and further developed;

(e) System tools and elements

- (24) The criteria for registration of sources should be made more explicit;
- (25) The List of Attributes used for storage and retrieval in the INFOTERRA system should be further improved;
- (26) The INFOTERRA Directory should be published biennially and updated by means of six-monthly supplements;
- (27) The INFOTERRA Operations Manual should be rewritten to bring it up to date;
- (28) Support should be given for expert groups as necessary in planning INFOTERRA development;

(f) Links with other systems

- (29) Proposals for new United Nations information systems should be reviewed in the light of the scope of INFOTERRA in order to prevent duplication of efforts;
- (30) INFOTERRA national focal points should strengthen their links with national and international information systems in their countries;
- (31) INFOTERRA should continue to co-operate, as appropriate, with other United Nations information systems.

C. INTERNATIONAL REGISTER OF POTENTIALLY TOXIC CHEMICALS (IRPTC)
(budget sub-line 1301)

27. National correspondents have been appointed by 11 more countries, bringing the total to 96, with the following regional distribution:

Date	Africa		Asia and the Pacific		Europe and North America		Latin America		West Asia		Total	
	Coun-tries	Ncs	Coun-tries	Ncs	Coun-tries	Ncs	Coun-tries	Ncs	Coun-tries	Ncs	Coun-tries	Ncs
April	16	18	19	23	19	21	18	18	5	5	77	85
December	21	23	19	23	21	23	19	19	8	8	88	96

28. Information on the toxicity of chemicals and their use, and on regulations concerning chemicals was provided in response to 39 requests. Data profiles 17/ for selected chemicals were prepared in co-operation with network partners and national correspondents. These data profiles are now published on a regular basis and contain information on, inter alia, production and use; pathways into the environment; concentrations and transformation in the environment, chemobiokinetics; toxicity to mammals and man; effects on non-mammalian organisms and plants; and national and international recommendations and regulations for the control of chemicals in air, water, drinking water, wastes, soil, food and beverages and consumer goods.

29. A comprehensive data profile on mercury and mercury compounds 18/ was published as part of a co-operative programme on health-related aspects of mercury levels in edible marine organisms of the Mediterranean Sea.

30. In July 1980 the IRPTC Bulletin Vol. 3, No. 2 was published. It contains information on acid rain, arsine, benzidine o-tolidine and o-dianisidine-based dyes, cadmium, chlorofluorocarbons and many other chemicals of concern, on legislation and regulations from Australia, Japan, Netherlands, the United Kingdom and the EEC related to control of chemical hazards, and on activities of national and international organizations as well as those of UNEP. 19/

31. A workshop for national correspondents in the Africa and West Asia regions (Nairobi, 24-28 November 1980), attended by 21 national correspondents from 20 countries, recommended strengthening of IRPTC's data-handling capabilities

17/ Data Profiles for Chemicals 1980. Data Profile Series No. 4. (IRPTC, Geneva, 1981).

18/ Data Profile on Mercury (with special emphasis on data from the Mediterranean Region). Data Profile Series No. 3 (IRPTC, Geneva, 1980).

19/ IRPTC Bulletin, Vol. 3, No. 2 (English, French, Russian, Spanish).

and its networking arrangements with national correspondents, emphasized the importance of workshops and training courses to understand and use the information and data contained in data profiles and other technical publications, and stressed the need for IRPTC assistance in establishing national registers of potentially toxic chemicals. The report of the workshop is available from the IRPTC Programme Activity Centre in English and French. 20/

32. Two meetings of the Programme Advisory Committee on the International Programme on Chemical Safety (IPCS), in which ILO, UNEP, and WHO now formally co-operate, were held, in April and December 1980, and the Technical Committee met for the first time in July 1980. The committees identified evaluation and dissemination of scientific information, manpower training and development, and risk estimation for chemicals as priority objectives of IPCS for 1980-1981, and recommended that special attention be given to participation by developing countries. An IPCS/CEC Joint Task Group (Ispra, Italy, November 1980) drew up a list of priority industrial chemicals for evaluation by IPCS. Working relationships with lead institutions started in 1980, and negotiations with countries on their active participation in the programme continued. IRPTC assumed a lead role in data handling for the Programme, while IARC is to be the lead institution for chemical carcinogenesis. Discussions were initiated with OECD on co-ordination of activities in the field of chemical safety. A joint WHO/SCOPE Scientific Group on Methodologies for the Safety Evaluation of Chemicals held its first executive meeting in July 1980.

33. A consultation on priority problems in toxic chemicals control in Europe (Baden, Austria, 3-6 November 1980), convened in the framework of the European Regional Programme on Environmental Health Aspects of the Control of Toxic Chemicals, which operates in close co-ordination with IPCS, made a number of specific recommendations on monitoring activities, epidemiological surveys, impact and risk assessment studies, manpower development in training activities. In the same context, the WHO Regional Office for Europe, in collaboration with IRPTC, initiated a survey of the administrative procedures for implementation and enforcement of control measures related to toxic chemicals. The report on this study will be submitted to a working group on contingency planning for and response to emergencies and accidents involving potentially toxic chemicals (Bilthoven, Netherlands, 9-13 February 1981).

34. The second experimental phase of the International Occupational Safety and Health Hazard Alert System, implemented by ILO and IRPTC co-operation has started. Consultative meetings have been held for Europe and the Americas, and are planned for Asia and Africa, to involve the designated national bodies of the System in its design and operation. On 10 October 1980 ILO transmitted a fifth experimental health hazard alert on 2-nitropropane, a widely used industrial solvent which is a proven animal carcinogen and a potential human carcinogen.

20/ Report of Workshop for National Correspondents in the Africa and West Asia Regions, Nairobi, Kenya: 24-28 November 1980 WS/AWA/23.

35. In response to Governing Council decision 8/8, on transboundary transport and disposal of hazardous chemical wastes, a project has been initiated with the United Kingdom Waste Management Information Bureau, to develop preliminary draft guidelines for review by a working group of experts (Munich, 17-20 March 1981).

D. OUTER LIMITS
(budget sub-line 1303)

1. Climatic changes

36. In accordance with Council decision 8/6, section II, paragraph 2, and as part of the UNEP-sponsored WMO project on the environmental assessment of changes in atmospheric carbon dioxide, 21/ a meeting of experts jointly convened by UNEP, WMO and ICSU (Villach, Austria, 17-22 November 1980) identified for action five areas of uncertainty:

- (a) The likely consumption of fossil fuel over the next century;
- (b) The prospective modes of management of the global biosphere over the next century;
- (c) The clarification of the carbon cycle and quantification of the partitioning of the carbon dioxide among the atmosphere, the oceans and the biosphere;
- (d) The climatic response to increasing carbon dioxide in the atmosphere;
- (e) The potential impact of climatic change.

As required by the same decision, the Executive Director has established a high-level scientific committee, composed of experts acting in their individual capacities, to advise on the development of the plan of action on the Climate Impact Study Programme. The committee will hold its first meeting at Nairobi from 23 to 27 February 1981.

37. Support was given to a Technical Conference on Climate for Asia and the Western Pacific Area (Guangzhou, China, 15-20 December 1980), 22/ attended by representatives of United Nations bodies as well as Government experts, which noted the increasing influence of climate on food production and water availability, as well as the need for effective use of energy resources as demand approached the limits of availability, and proposed a new approach designed to ensure the full application of climate knowledge in the planning and operation of food production and the use of water and energy resources.

2. Weather modification

38. Draft guidelines for national legislation concerning weather modification were submitted to Governments for their views and comments, with the prior agreement of WMO. The Secretary-General of WMO has, as requested by Council decision 8/7A, periodically communicated to the Executive Director all information activities carried out made available to him in accordance with the provisions for co-operation between States in weather modification.

21/ FP/1303-79-03.

22/ FP/1303-80-01 (2203).

3. Risks to the ozone layer

39. The fourth session of the Co-ordinating Committee on the Ozone Layer (Bilthoven, Netherlands, 11-14 November 1980) concluded that if releases of chlorofluorocarbons continue at the existing rate, an ultimate ozone depletion of about 10 per cent will occur, compared with a figure of 15 per cent estimated last year: the change is due to new data on chemical reaction rates. Model calculations suggest that a total ozone depletion of about one per cent should have already occurred, but such an amount cannot be detected directly with present technology. The Committee also made 25 specific recommendations for future action.

40. In accordance with Council decision 8/7B, the Executive Director submitted recommendations to Governments regarding chlorofluorocarbons, and invited views on the most appropriate ways of accelerating international co-operation. Replies have been received from nine Governments, the majority of which expressed concern over the dangers to the ozone layer and favoured a limitation of the production and use of these chemicals: one Government suggested that a convention be developed for this purpose.

4. Assessment of basic human needs in relation to outer limits

41. The seven major working papers of the UNEP/ALECSO Workshop on Technologies for Sustainable Satisfaction of Basic Human Needs 23/ have been edited for publication, along with its report. The Workshop's findings will be used by ALECSO and ECWA in their work on catalysing regional co-operation and national action in respect of technology policies in the Arab states, and the publication will be distributed to development planning, science and technology and environmental offices throughout the Arab region.

42. Three research institutions have begun preparatory work, 23/ within a common conceptual framework, on the empirical research on the relationship between basic needs satisfaction and environmental quality.

43. The ACC Task Force on Rural Development is engaged in redefining the nature and scope of co-ordination of agency activities in the light of the Programme of Action adopted at the World Conference on Agrarian Reform and Rural Development. In these consultations, the UNEP secretariat has emphasized: (a) integration of environmental information with that relating to social and economic aspects; (b) greater attention to technical co-operation for environmentally sustainable rural development; and (c) inter-agency joint programming of activities relating to specific aspects of rural development (e.g. physical infrastructure, natural resources and environment).

44. As a result of the in-depth review of Earthwatch, 24/ it is proposed that the objectives and strategies for assessment of basic human needs in relation to outer limits be amended to read as follows:

23/ FP/1303-78-04.

24/ UNEP Report No. 1 (1981).

(a) Objectives

- (i) To promote awareness, at various levels, of the nature and significance of the interrelation between mass rural poverty and significant changes in environmental quality;
- (ii) To mobilize and disseminate methodological guidance on assessment and monitoring of this relation in various ecological situations;
- (iii) To make available guidance on design of poverty alleviation and environmental improvement programmes so that they become mutually supportive;

(b) Strategies

- (i) Promotion of empirical research, in various ecological situations, on the interaction between mass rural poverty and environmental quality;
- (ii) Promotion of scientific examination of environmental aspects of major programmes addressed to poverty alleviation and rural development;
- (iii) Promotion of scientific examination of major programmes aimed at conservation of nature from the standpoint of their implications for sustainable alleviation of rural poverty;
- (iv) Consultation with international organizations and promotion of participation of environmental expertise, as appropriate, in their major initiatives aimed at providing guidance for national strategies and policies for alleviation of mass poverty.

5. Bioproductivity

(a) Biogeochemical cycles

45. The SCOPE steering committee on biogeochemical cycles met 2-4 June 1980, to discuss the preparation of the report to be presented in 1982. Considerable progress has been made in the study, and an international workshop to evaluate the draft will be held in Stockholm in May 1981. The final report will focus on the interactions of the cycles in the atmospheric, marine and terrestrial components of the biosphere. The Co-ordination Unit for studies on the carbon cycle established contacts with 250 sources from which data will be gathered, and produced a microfiche of bibliographies on seven topics. Under the SCOPE/UNEP project 25/ on the global sulphur cycle, the editorial committee held several meetings for the purpose of reviewing various chapter drafts.

46. The SCOPE/UNEP International Nitrogen Unit in Stockholm 26/ is assisting the Joint FAO/IAEA Division of Isotope and Radiation Applications of Atomic Energy for Food and Agricultural Development in its programme on agricultural nitrogen residues with particular reference to their conservation as fertilizers and behaviour as potential pollutants by evaluating the losses of nitrogen in agro-ecosystems. The Unit completed a report on monitoring of nitrogenous substances and held the final regional workshop of a series of three in Colombia.

(b) Photosynthesis

47. A third international training course 27/ in techniques in bioproductivity and photosynthesis for 21 technicians from developing countries was held at Belgrade from 22 August to 6 September 1980.

48. At its second meeting, held in Thessaloniki, Greece, in conjunction with the Fifth International Congress on Photosynthesis (7-13 September 1980), the UNEP Study Panel on Photosynthesis in Relation to Bioproductivity approved arrangements for the publication of the training manual, scheduled for 1981, reviewed progress in the regional studies and prepared a programme of work for the biennium 1982-1983.

E. ENVIRONMENTAL DATA 28/
(budget line 1600)

I. Regional workshops and pilot country studies

49. As a result of agreements between UNSO and the regional commission concerned on complementary programmes on environment statistics, state of the environment assessment, and environment and alternative styles of development, two workshops have been held. The first, on environment statistics and environmental management for the Latin American region (Santiago, Chile 7-11 April 1980), identified priority concerns for environmental management in the region and agreed on principles of generation and use of environment statistics. 29/ The second workshop (Honolulu, 20-24 October 1980) specified the needs of Pacific countries for environmental data, established priorities for statistical data collection and suggested a future work programme, including country projects. 30/ The results of the workshops and country studies will be incorporated into revised guidelines on environmental statistics and statistical frameworks published by UNSO.

50. A draft programme on the development of environmental statistics in Kenya has been established by the Central Bureau of Statistics as part of the Kenyan pilot project on environmental statistics. 28/ The programme identified priority environmental concerns for Kenya and developed an analytical structure for the collection of statistics relevant to these concerns.

26/ FP/1303-78-01.

27/ FP/1303-78-01.

28/ FP/1600-77-02.

29/ Report published as E/CEPAL/G.1120.

30/ Report to be published by UNSO and the East-West Centre Environment and Policy Institute.

51. A seminar on methodological questions of environmental statistics (Warsaw, 15-19 September 1980), jointly convened by the Conference of European Statisticians and the Senior Advisors to ECE Governments on Environmental Problems, discussed data collection techniques, data use, the relationship between monitoring and survey data, and co-ordination questions.

2. Guidelines on concepts, definitions, classification and methodologies

52. Technical reports on five priority areas of environmental concern (energy, natural resources, land, human settlements and pollution) were drafted to guide discussions at the workshops referred to in paragraph 48 above. The reports will be published by UNSO. Two draft reports on over-all structures for the organization of environmental statistics at the national level and for international reporting of environmental data, have also been prepared, and will be published by UNSO in its methodological series.

3. Reference directory of country practices

53. UNSO has established a reference directory of country practices which provides a composite overview of statistical or related data on activities concerning the environment in each country and indicates the links between such statistics and their sources and uses. It is thus a standard inventory against which country practices, needs, plans and priorities can be assessed. By the end of December 1980, the directory included 137 countries.

Chapter II

SUBJECT AREAS

A. HUMAN SETTLEMENTS (budget sub-lines 0104-0106)

54. The third joint meeting of the Bureaux of the UNEP Governing Council and the Commission on Human Settlements with the Executive Directors of UNEP and UNCHS (Habitat) was held on 4 and 5 December 1980. The outcome of the meeting is described in document UNEP/GC.9/4/Add.5.

55. A UNEP/UNESCO expert group meeting held in Mexico city in May 1980 to consider twelve case studies on the ecosystems approach to human settlements planning identified some of the inherent difficulties associated with that approach and the aspects of it requiring further research.

56. Following the visit of a joint UNEP/UNCHS team to Mexico city at the invitation of the Government of Mexico in June 1980, a project was developed for the preparation and testing of a set of methodologies for assessing the impact of urban development on the environment in the Valley of Mexico.

57. An International Symposium and Study Tour on Waste Water Technology for Developing Countries (Karlsruhe, 18-28 November 1980), organized with the assistance of the Government of the Federal Republic of Germany, was attended by 45 participants from 22 developing countries, and considered 26 substantive papers on all aspects of waste water treatment and a synopsis of 20 country monographs on waste water treatment in developing countries. Participants urged that in order to meet the goals of the International Drinking Water Supply and Sanitation Decade (1981-1990), Governments, international organizations and bilateral agencies should give equal priority to drinking water supply and waste water treatment.

B. HEALTH OF PEOPLE AND OF THE ENVIRONMENT (budget sub-line 0107-0108)

58. In response to Governing Council decision 8/16 A of 29 April 1980, a project on the impact of the long-range transmission of air pollutants on the health of man and the environment: Europe 1/ was approved.

59. Under the project "Strengthening the work of the FAO/WHO Codex Alimentarius Commission and FAO/WHO capabilities to assist developing countries in food control", 2/ FAO has prepared a Food Inspection Manual (FAO Food and Nutrition Paper No. 14 Vol.5) to assist food inspectors in developing countries in the conduct of monitoring and surveillance activities.

1/ FP/0107-80-05.

2/ FP/0107-75-06.

60. Since the Council's ninth session, the Codex Committees on Food Additives (CCFA), Food Hygiene (CCFH) and Pesticide Residues (CCPR) have held one session each. Apart from endorsing a number of provisions for food additives and contaminants in Codex Standards, CCFA has looked in depth at the question of justifying the use of chemicals in food from the point of view of consumer protection. Future work in additives is extending into processing aids and other chemicals arising from food production processing. CCPR made recommendations for the residues of further pesticides in food and feed and has finalized, or embarked on establishing, guidelines to assist in standardizing the approach to generating residue data, setting maximum residue limits and clarifying certain issues relating to regulation and enforcement. As regards environmental and industrial contaminants in food, it is envisaged that any recommendation requiring international negotiation and agreement will be handled by one of the above two committees. CCFH elaborated further codes of hygienic practice for meat and fish products, as well as general principles for the establishment and application of microbiological contamination of food which can lead to the presence of microbes and their toxins which could represent a hazard to health.
61. IARC has to date published 21 monographs on the evaluation of the carcinogenic risks of chemicals on man. Of the 530 environmental chemicals evaluated, 10 per cent have been recognized as justifying constant concern in view of their potential carcinogenicity.
62. An International Training Course on Food Contamination with Special Reference to Mycotoxins, organized by the USSR Commission for UNEP through the USSR Ministry of Health (Moscow, 21 October - 19 December 1980), was attended by eight participants from developing countries. 3/
63. The fourth UNEP/ICIPE group training course on components essential for ecologically sound pest and vector management systems 4/ (Nairobi, June/July 1980) was attended by 26 scientists from 13 developing countries. An evaluation meeting at the end of the course recommended its continuation.
64. An international training course 5/ on ecologically safe methods for control of malaria and its vectors, held in the Soviet Union from 1 to 30 September 1980 for 22 scientists from 22 developing countries, included lectures and practical training by leading Soviet and WHO experts in the field of malaria control.
65. An international course on zoonosis management 6/ held in the Soviet Union from 15 September to 20 November 1980, included a series of lectures and practical training on ecologically-sound methods for control and management of zoonotic diseases and was attended by 22 specialists from 14 developing countries. An international evaluation of this course will be conducted at the end of the 1981 course, due to be held in September/October 1981.

3/ FP/0107-79-03.

4/ FP/0107-76-02.

5/ FP/0108-79-04.

6/ FP/0108-79-05.

C. ARID AND SEMI-ARID LANDS ECOSYSTEMS
INCLUDING DESERTIFICATION
(budget line 1700)

66. A progress report is given in document UNEP/GC.9/8, while the implementation of the Plan of Action to Combat Desertification in the Sudano-Sahelian region is reported in document UNEP/GC.9/8/Add.1.

D. TROPICAL WOODLANDS AND FOREST ECOSYSTEMS
(budget sub-line 1102)

67. As a follow-up to Council decision 8/9 A of 29 April 1980, the recommendations of the Expert Group Meeting on Tropical Forests (February/March 1980) were circulated in August 1980 to Governments and to organizations and bodies both within and outside the United Nations system. Of the Governments that have replied, Chile, Fiji, Philippines, United Republic of Tanzania and Western Samoa support the recommendations, Bolivia and El Salvador have acknowledged receipt, but have yet not sent comments, Brazil is opposed and Zimbabwe has asked for certain clarifications on the document. The following international organizations and bodies responded in support of the recommendations: FAO, UNESCO, WMO, World Bank, UNCTAD, IFAD, African Development Bank, Asian Development Bank, Commonwealth Forestry Institute, IUFRO and Rockefeller Foundation.

68. In response to decision 8/9 B, negotiations are under way with the Government of the United Republic of Cameroon, UNESCO and UNDP, with a view to establishing a Regional Centre for Scientific Information and Documentation in Tropical Ecology at Yaounde.

69. An International Post-Graduate Training Course on Ecosystem Management was held at the Technical University in Dresden 7/ (October 1979 to July 1980) for 14 students from developing countries. A similar course was held in October/November 1980 with 15 students from developing countries taking part.

70. As part of the UNESCO/UNEP programme for the development of ecological pilot projects in tropical forest areas, 8/ studies were carried out in the Philippines. A final technical report on the pilot projects at Puerto Galera and in the Agno River Basin has been received which gives useful guidelines for coastal and river basin development. This report forms part of the UNESCO Man and Biosphere (MAB) programme, and copies will be made available to all relevant National MAB officers throughout the world.

E. MOUNTAIN, ISLAND, COASTAL AND OTHER ECOSYSTEMS
(budget sub-line 1105)

71. A workshop on ecological information systems for land management in the Mediterranean area (Montpellier, 2-5 December 1980), held under the MAB programme with UNEP sponsorship 9/ and attended by 28 participants from the region, recommended linking environmental information systems to appropriate national documentation centres, as well as to existing international systems, and initiating the development of a network for environmental information exchange between Mediterranean countries. To this end, UNESCO was requested to develop a project for regional action in consultation with the Governments concerned and UNDP.

7/ FP/1102-78-01; also relevant to environmental training.

8/ FP/1102-76-01.

9/ FP/1105-80-01.

F. SOILS
(budget sub-line 1106)

72. A workshop 10/ on land and soil restoration and rehabilitation after mining activities (Warsaw, 16-20 December 1980), attended by 15 experts from ten countries and three international organizations, produced guidelines for land and soil rehabilitation after mining activities which will provide a chapter of the FAO publication "Guidelines to control soil degradation", to be published in 1982 (UNEP goal 8 for 1982).

73. A joint FAO/UNESCO/UNEP/ISSS workshop attended by participants from six countries (Sofia, 4-8 May 1980) adopted guidelines for assessment and classification of "soil units of high level" as a step towards an international soils classification.

74. In response to Council decision 8/10 of 29 April 1980, FAO, UNESCO, WFP, WMO, SCOPE, IFIAS, IASA and ISSS have agreed to co-operate with UNEP in the preparation of a world soils policy and related follow-up activities. An expert group meeting on this subject will take place at Rome from 23 to 27 February 1981. The preparation of soil degradation maps is reported under GEMS (para. 6 above).

G. WATER
(budget sub-line 1107)

75. A meeting of the Inter-Secretariat Group on Water Resources (New York, 11-19 November 1980) discussed the application of the Mar-del-Plata Action Plan by the United Nations system. The meeting considered two major reports: present and future activities of the United Nations system in water resources development (ACC/GWR/1980/2); and present status of water resources development: progress and prospects since the United Nations Water Conference (ACC/GWR/1980/3). These reports will be submitted for consideration and approval to the Committee of Natural Resources in May 1981. The UNEP secretariat is an invited observer at the Steering Committee to the International Drinking Water Supply and Sanitation Decade, which was officially launched by the General Assembly in November 1980.

76. An international workshop on protection of ground water from pollution and depletion, held in the USSR (16-21 December 1980) under the UNEP/UNESCO project: "Protection of the lithosphere as a component of environment", 11/ discussed scientific reports on various aspects of ground-water use and conservation. The reports will be included in a manual on methodologies for hydrogeological zoning and protection of ground-water against pollution and depletion, to be published in 1982.

77. An International Expert Group Meeting on Prevention and Amelioration of sedimentation in dams, held in Tunisia (1-4 July 1980) as part of the project 12/ "Support to the International Training Centre for Water Resources Management in Valbonne, France", approved for publication a technical manual on the results of case studies made under various natural and climatic conditions.

10/ FP/1106-76-01.

11/ FP/1107-79-04.

12/ FP/1107-77-01.

78. The second annual two-month training course 13/ on rational utilization of water resources and environmental conservation in river basins (Novocherkassk, USSR, 25 August - 10 October 1980) provided theoretical training on various aspects of river basins management for 16 specialists from developing countries, with field study tours in various river basins.

H. GENETIC RESOURCES
(budget sub-line 1108)

79. The annual year-long course in applied microbiology 14/ was held at Osaka, Japan, for scientists from developing countries. In addition, UNEP supported short training courses 14/ on environmental aspects of microbiological food contamination and its control; basis of kinetics of growth, metabolism, and product formation of micro-organisms; Rhizobium technology; culture collection techniques and identification procedures and their use by MIRCEN in environmental management; diagnostic veterinary microbiology; ligno-cellulosic conversion; biodeterioration; conservation of microbial cultures and development of culture collection; techniques in bioproductivity and photosynthesis; biogas technology and biofertilizer production; and microbiology of nitrogen cycling.

80. The sixth Conference on Global Impacts of Applied Microbiology 14/ (Lagos, 30 August - 6 September 1980) was attended by about 200 scientists and included symposia on biofuels and biofertilizers from organic wastes, food storage and post-harvest losses, indigenous fermented foods, and approaches to the utilization of micro-organisms for sustained development. A workshop on biotechnology and resource recycling, 15/ organized by UNEP and the University of Waterloo (Waterloo, Canada, 27-31 July 1980) in conjunction with the sixth International Fermentation Symposium, was attended by 32 scientists from developing countries and 16 educators, and discussed the use of biotechnological processes in environmental management.

81. Following a request from a number of central American Governments to UNESCO, the network of Microbiological Resources Centres (MIRCEN) 14/ was expanded with the establishment, with support from the World Bank, of a fifth MIRCEN for the Caribbean region, based in Guatemala and focused on resource recycling. The Bangkok MIRCEN produced a catalogue of approximately 800 strains, distributed 60 and added 69 cultures, trained 6 technicians and established a network of collaborating institutes in Indonesia, Philippines and Thailand. The Cairo MIRCEN now holds a culture collection of more than 900 strains and has distributed more than 500 cultures in the region, initiated a number of projects in the region and established a network in Iraq, Jordan, Saudi Arabia, Sudan and Syria. The Nairobi MIRCEN produced a catalogue of 112 strains and held a meeting for the regional network at which Kenya, Sudan, Uganda, United Republic of Tanzania and Zambia were represented. The Porto Alegre MIRCEN produced a catalogue of 600 cultures, assisted in the training of 45 technicians from 13 countries in the region, supplied inoculants for field trials in Bolivia and supported trials in Argentina and Chile. The Guatemala MIRCEN established a network of 31 collaborating laboratories in Chile,

13/ FP/1107-80-01.

14/ FP/1108-75-03.

15/ FP/0402-80-01.

Colombia, Costa Rica, Dominican Republic, Ecuador, El-Salvador, Jamaica, Mexico, Nicaragua, Peru and Venezuela. The World Data Centre on Micro-organisms at Brisbane presently has 441 collections from 65 countries, with a total of 24,760 cultures listed, and has distributed 196 cultures world-wide.

82. The UNEP-supported research programme on biological nitrogen fixation in the tropics at IITA 16/ was concluded and a report produced. A catalogue of 314 Rhizobium cultures collected in Africa and a manual of basic techniques in Rhizobium isolation and utilization have been published. Cultures have been distributed to 13 African countries, while locally-produced effective inoculants have been distributed to 10 African countries and 22 African technicians have been trained in the relevant techniques. The research revealed significant soybean yield increases as a consequence of seed inoculation with elite strains of Rhizobium japonicum under tropical West African conditions.

83. A FAO/UNEP meeting of experts on biological nitrogen fixation 17/ (Rome, 6-12 June 1980) reviewed international experience in this area over the past 10 years and produced specific recommendations on further work.

84. The FAO/UNEP emergency collection of crop-plant genetic resources 18/ has been concluded, and has since been taken over by IBPGR. The annual year-long training course in conservation of crop genetic resources 19/ was again held at the University of Birmingham with 15 students from developing countries. Collection and long-term storage of crop-plant germ plasm 19/ continued. The Ethiopian gene bank was officially opened in July 1980. The Netherlands and Brazil have set up national gene banks, while a vegetable gene bank was set up in the United Kingdom. Japan and Turkey reported significant developments in this field.

85. FAO published one issue of "Forest Genetic Resources Information". A FAO/IBPGR pilot study on the deployment of tree genetic resources for environmental management and improvement of rural living has produced an outline of a more comprehensive methodology for conservation and deployment of genetic diversity. The FAO/UNEP Expert Consultation on in situ Conservation of Forest Genetic Resources (Rome 2-4 December 1980) 20/ concluded that whenever possible, multi-purpose in situ conservation areas incorporating genetic conservation should be established that the MAB programme is among the appropriate vehicles for effective conservation of within species genetic diversity of forest plants, and that the highest priority should be accorded to economic forest tree and shrub species in the tropics. The meeting outlined the constraints facing such conservation and recommended a programme of action involving an array of strategies responding to the diversity of situations.

16/ FP/1108-75-07.

17/ FP/1108-75-07.

18/ FP/0604-73-04.

19/ FP/1108-78-02.

20/ FP/1108-75-05.

86. Five FAO/UNEP reports on conservation and management of animal genetic resources have been published 20/ covering, inter alia: prolific tropical sheep; the sheep breeds of Afghanistan, Iran and Turkey and animal genetic resources in Latin America. An inter-governmental technical consultation on the conservation and management of animal genetic resources (Rome, 2-6 June 1980), 21/ was attended by 112 experts and representatives from 46 countries. Key recommendations in the report of the meeting relate to the need for FAO to establish an appropriate co-ordinating mechanisms, establishment of gene banks, development and conservation of local breeds in national agricultural development programmes, and provision of an international medium for information on indigenous breeds. Strong follow-up action to the consultation has been established by working parties in various parts of the world.

87. An Expert Consultation on Fish Genetic Resources 22/ (Rome, 9-13 June 1980) recommended in its report approaches that national and International bodies and the scientific and aquaculture communities should take in order to improve the chances of preserving specific fish populations.

1. WILDLIFE AND PROTECTED AREAS
(budget sub-line 1110)

88. In response to Governing Council decision 8/11 of 29 April 1980, the World Conservation Strategy was forwarded to all Member States and United Nations organizations with a request that UNEP be kept informed of developments in direct support and implementation of the Strategy. So far seven Governments have responded, some providing comments on the Strategy and information on on-going or planned activities for its implementation, and others indicating that they will endeavour to publicize it and work out ways to adopt it with a view to its implementation within their development plans, objectives and programmes. Six United Nations organizations have so far responded positively to the decision. The Ecosystem Conservation Group has agreed to concentrate within the Strategy on terrestrial and fresh-water ecosystems and coastal wetlands and shallows of special conservation importance, particularly with regard to wildlife genetic resources.

89. The 1980 United Nations List of National Parks and Equivalent Reserves was published by UNEP/IUCN in May 1980. 23/ Approximately 250 additional inventory sheets for Africa and Europe were issued in the loose-leaf UNEP/IUCN World Directory of National Parks and Other Protected Areas. Three more issues of Parks Magazine were published, providing valuable information on the planning, use and management of national parks and other protected natural and cultural resources.

90. Under a UNEP/FAO project 24/ two more issues of Tiger Paper covering information exchange on wildlands, wildlife and protected areas in Asia-Pacific were published. The latest issue of Tiger Paper reported on the results of and guidelines elaborated by the International Consultation on Wildlife Resources for Rural Development (Hyderabad, 7-11 July 1980), organized by the FAO Regional Office for Asia and the Pacific in collaboration with Andhra Pradesh Agricultural University and the Andhra Pradesh Forest Department.

21/ FP/1108-76-02.

22/ FP/1108-80-01.

23/ FP/1110-79-01.

24/ FP/1104-75-02.

91. Under the UNEP/Mongolia project 25/ in the Great Gobi National Park, a reconnaissance of the park area and TTs buffer zone was undertaken and initial ecological, hydrological and veterinary investigations and wildlife inventories were completed.

92. The Proceedings of the UNEP/IUCN Cetacean Sanctuary Workshop in Tijuana and Guerrero Negro, Mexico (4-9 February 1979) 23/ were issued in July 1980.

93. The third meeting of the Standing Committee of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (Nairobi, 26 April 1980) established an Ad-hoc Committee on Ranching, which held its first meeting in London on 9 July 1980. 26/ Among the major publications already circulated to parties are: the Proceedings of the Second Meeting of the Conference to the Parties, San José, Costa Rica, 19-30 March 1979; the Proceedings of the First Meeting of the Technical Expert Committee on Harmonization of Permit Forms and Procedures, Bonn, Federal Republic of Germany, 29-31 January 1980; revised guidelines for transport and preparation for shipment of live wild animals and plants; a trilingual Directory of Management Authorities which has since been updated as necessary; and the TRAFFIC (International) Bulletin covering reviews and analysis of trade records of Flora and Fauna in commerce. The statistical information provided by Parties in their annual reports is being compiled and will shortly be published in a yearbook. Following decisions taken by the International Whaling Commission (IWC), the revised "List of Species and Stocks of Whales Protected from Commercial Whaling by the International Convention for the Regulation of Whaling" was prepared and transmitted to the Parties to the Convention in June 1980 for discussion at the third meeting of the Conference of Parties (New Delhi, 25 February - 8 March 1981).

94. The First Conference of the Contracting Parties to the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Cagliari, Sardinia 24-29 November 1980) agreed on criteria for identifying wetlands of international importance and requested IUCN, in co-operation with IWRB, to draw up a new set of guidelines for the selection of wetlands of international importance. The UNEP/IUCN Directory of Wetlands of International Importance in the Western Palearctic Region was published in November 1980.

95. As part of the co-operation between UNEP and IUCN, support was given to the convening of the First All-African Wildlife Conference (Nairobi, 13-19 July 1980), which focused on wildlife conservation and socio-economic development in Africa within the framework of the World Conservation Strategy. Recommendations included further support to: wildlife training/education, the updating of survey reports of African biotic communities, and various meetings in Africa in 1981 on wildlife management. The OAU secretariat was asked to follow-up and co-ordinate the implementation of the recommendations of the Conference.

25/ FP/1103-78-01.

26/ FP/1104-76-01.

96. The status of ratification, accession or acceptance of conservation conventions is given in document UNEP/GC/INF.5/Suppl.4.

J. INTEGRATED APPROACH TO ENVIRONMENT AND DEVELOPMENT,
INCLUDING ECODEVELOPMENT
(budget sub-line 0404)

97. In the wake of the regional seminars on alternative patterns of development 27/ and lifestyles, a series of publications are under preparation. A volume on environment and development in Africa is scheduled to appear in mid-1981 in both English and French. The proceedings and background documentation of the UNEP/ECE seminar will be published in the first half of 1981. The background documentation of the UNEP/ESCAP seminar is being edited for publication in 1981. Likewise, the proceedings and the background papers of the UNEP/ECWA seminar are being readied for publication. Two volumes in Spanish titled "Estilos de Desarrollo y Medio Ambiente en America Latina", containing 37 edited background papers that were submitted to the UNEP/ECLA seminar, have been published. In addition, CEPAL Review No. 12, (December 1980) was devoted entirely to the same subject, a book will be published by ECLA, by mid-1981 in both English and Spanish, on the environmental dimension in Latin American development patterns, and four publications in the ECLA collection "Cuadernos" will contain individual background papers from the UNEP/ECLA seminar. A two-year project 28/ designed to sustain the momentum attained at the seminar and increase the co-operation among the countries of the Latin American region related to styles of development and environment has been initiated. The project aims, inter alia, at encouraging these countries to find their own solutions to the problems they face, exchange experience and collaborate in adopting joint strategies on these problems.

98. The Kenya national project 29/ on environment and development has been completed, and copies of the draft report will be available during the Governing Council. The final report will be published for wider distribution. UNEP is also in the process of identifying other developing countries where similar projects could be undertaken.

K. ENVIRONMENTALLY SOUND AND APPROPRIATE TECHNOLOGY
(budget sub-line 0402)

99. In response to Governing Council decision 8/16 A, UNEP has extended the project on co-operation with ECE for the implementation of the Declaration on Low and Non-waste Technology and completion of a compendium 30/ to the end of 1982. Monographs on the use of lubricating oil as cement kiln fuel; recovery of fluoride in aluminium production by improved gas collection and dry scrubbing of gas; and high temperature granulation of fertilizer materials have been prepared under the project.

27/ FP/0404-78-10.

28/ FP/0404-80-02.

29/ FP/0404-78-09.

30/ FP/0402-78-02.

100. The following achievements have taken place under the UNEP/CSC project 31/ on management of water hyacinth: successful anaerobic digestion of water hyacinth for the production of biogas using the Chinese design, the Indian design and the polymer digester (Fiji); isolation and characterization of growth-promoting constituents for water hyacinth; utilization of water hyacinth for pollution control (Malaysia). Feasibility studies for small-scale plants utilizing water hyacinth for the production of paper and board have been prepared, and negotiations entered into with funding agencies (UNDP) before launching into further practical implementation.

101. The report on the training course on biogas in China 32/ has been completed and is in the process of publication.

102. Under the UNEP internal project on the environmentally sound and appropriate technologies network, 33/ "Technology, development and environment" has been published in French by "Economie et Humanisme", and translation into Russian is in progress.

L. INDUSTRY AND THE ENVIRONMENT
(budget sub-line 0408)

1. Environmental consideration of major industrial sectors

103. The following materials have been prepared by UNEP during the reporting period:

(a) Environmental management guidelines for the motor vehicle and its use;

(b) Report on the FAO/UNEP Expert Consultation on the Reduction of Food Losses in Perishables of Plant Origin. 34/ The report recommended that an international action programme to prevent post-harvest food loss in perishables of plant origin should be initiated along similar lines to the existing programme for food grains;

(c) The final report of the Workshop on Use and Application of Oil Spill Chemicals. The report covers physical and chemical environmental effects on the environment and efficiency of the chemicals as well as environmental effects of dispersed in comparison with non-dispersed oil spills (IEO/WS/PET/7 Final);

(d) Volumes 1 and 3 of the five-volume manual on environmental management in the pulp and paper industry (UNEP/SIDA), covering air and water pollutants of the pulp and paper industry and in-plant measures in sulphate and soda pulping.

31/ FP/0402-79-01.

32/ FP/0402-79-02.

33/ FP/0402-78-01.

34/ FP/0408-79-01.

The remaining three volumes, dealing with in-plant measures in raw materials preparation, mechanical, chemimechanical and sulphite pulping, in-plant measures in paper making and de-inking, and external measures and alternative uses of effluent, have been drafted and reviewed.

104. UNEP has published and disseminated a technical review on the environmental aspects of aluminium smelting and guidelines on industrial environmental impact assessment and environmental criteria for the siting of industry.

105. The following training activities were undertaken:

(a) A European Regional Workshop on Industrial Environmental Impact Assessment and Environmental Criteria for the Siting of Industry was held in Tashkent, USSR, from 27 October to 1 November 1980;

(b) A WHO/UNEP workshop for the ESCAP region on control of emissions from motor vehicles was held at Kuala Lumpur, Malaysia from 10 to 14 November 1980. As a follow-up, WHO has begun a review of the problems of emissions from diesel vehicles in the region.

106. Meetings of the following two UNEP environmental consultative committees were held:

(a) "The motor vehicle and its use" (Paris, 17 September), which examined the guidelines and discussed the series of regional workshops on motor vehicle emission control and the interagency activity on motor vehicle mechanics training (see Report IE0/CC/MV. 2/4);

(b) "Pulp and paper industry" (Sao Paulo, Brazil, 19-21 November). The meeting reviewed the drafts prepared by IVL for UNEP, with SIDA funding, of volumes 2, 4 and 5 of the five-volume manual on environmental management in the pulp and paper industry, and gave the guidance necessary for the finalization and publication of the guidelines in early 1981.

107. A further ad hoc meeting of agencies and industry on training of motor vehicle mechanics in environmental protection was held (ILO/UNIDO/ECE/BPICA/UNEP), following which the ILO training material for motor vehicle mechanics, prepared as part of the ILO training methodology based on modules of employable skills, is being expanded to incorporate environmental aspects. Adequate training of motor vehicle mechanics in emission control is recognized as a very important action in encouraging improved maintenance of vehicles and consequently reducing emissions from vehicles in service.

108. The global mailing list for the quarterly Industry and Environment Newsletter now exceeds 4,500. Two regular issues were published, focusing on agro-industry and post-harvest food loss reduction and impacts of motor vehicle manufacturing and use trends, as well as a special issue on industrial cost-benefit analysis. Since the beginning of publication, in the last quarter of 1978, a total of 13 issues in English and French have been published.

109. The specialized and computerized industry and environment information data base now has over 2,000 bibliographical entries, as well as topic files on pollution abatement and control technologies, discharge standards, and ambient quality standards.

M. MARINE POLLUTION
(budget sub-line 0501)

110. As a follow-up to the workshop on intercalibration and monitoring of selected pollutants of open waters (Bermuda, 11-23 January 1980), 35/ the open-ocean water samples collected were analysed for trace metals and chlorinated hydrocarbons by laboratories in 13 countries. The analytical results were reviewed by a meeting at Monterey, United States in September 1980, which recommended the conduct by a station in Bermuda of a two-year pilot study on the open ocean monitoring of chlorinated hydrocarbons, the initiation of an open ocean monitoring programme on trace metals in the North Atlantic by conducting a base-line study during 1982, and continued development of intercalibration standards for open ocean monitoring programmes. It is planned to implement these recommendations through a joint exercise involving IOC, IAEA (Monaco laboratory), WMO, UNEP and selected national laboratories.

N. LIVING MARINE RESOURCES
(budget sub-line 0502)

111. IWC at its thirty-second annual meeting (Brighton, Sussex, 21-26 July 1980) considered, but failed to adopt, proposals on a moratorium for commercial whaling, for a ban on the taking of all sperm whales and for the extension of the southern boundary limits of the Indian Ocean Sanctuary. The meeting did, however, adopt a ban on the use of cold grenade harpoons in taking larger whales, but did not extend the ban to minke whales. Quotas for the 1981/1982 season totalled 14,553 whales of different species.

O. REGIONAL SEAS PROGRAMME
(budget sub-line 0503)

1. The Mediterranean

112. The Blue Plan's Group of Co-ordination and Synthesis was constituted and the implementation of the Blue Plan (Phase I) initiated in April 1980 (MEDEAS/UNEP). 36/ The Group has already initiated surveys concerning water resources; cultural heritage; health, population and population movements; and tourism space and the environment.

113. The Conference of Plenipotentiaries of the Mediterranean Coastal States (Athens, 12-17 May 1980) adopted the Protocol Concerning Land-based Sources of Pollution. 37/ Also at Athens, from 13 to 17 October 1980, an inter-governmental meeting on Mediterranean Specially Protected Areas 38/ adopted

35/ FP/0501-79-02.

36/ FP/0503-80-01.

37/ FP/0503-75-01; FP/0503-76-01.

38/ FP/0503-79-01.

principles for the selection, establishment and management of specially protected areas, and prepared the text of a draft protocol concerning such areas. (UNEP/FAO/UNESCO/IUCN) (also relevant to Wildlife and protected areas).

114. An expert meeting (Malta, 17-20 December 1980) reviewed the work of, and developed a long-term programme for, the Mediterranean Regional Oil Combating Centre. 39/

2. The Kuwait Action Plan

115. A UNEP/interagency mission (UNEP/UNESCO/IOC/FAO/WHO/IAEA) to the countries of the Kuwait Action Plan Region (March-July 1980) surveyed the national capabilities in the region in the fields of marine sciences, including marine meteorology, and environmental management including environmental legislation. National and regional consolidated reports were produced and distributed to Governments. 40/ On the basis of the findings of the mission, proposals were developed for projects on baseline studies of oil pollution; baseline studies, monitoring and effects of pollutants other than oil; physical oceanography and modelling; chemical oceanography; biological oceanography; oceanographic cruises and coastal surveys; impacts of industrial and municipal wastes; assessment of coastal engineering; and mining and other development activities.

116. The offices of the Kuwait Interim Secretariat for the co-ordination of the Kuwait Action Plan activities were officially opened on 7 July 1980 and have been operational as of that date.

3. The Caribbean

117. A regional workshop on Human Ecology and Development in the Caribbean 41/ (Barbados, 28 April - 2 May 1980), sponsored by the Government of Barbados, ECO-PAHO and UNEP, reviewed relationships between development and environment in the region.

118. A Caribbean Oil Spill Control Plan was formulated during a meeting of Government representatives from small islands (Puerto Rico, June 1980) (OAS/IMCO/UNEP). 42/ The Plan was elaborated further by a special task force. In addition, an inventory of land-based sources of pollution in the small Caribbean islands was prepared during July-September 1980 by CARICOM and UNEP. 43/

119. A directory of marine research centres in the Caribbean region was published in June 1980 44/ (UNEP/IOC).

39/ FP/0503-76-06.

40/ FP/0503-77-08.

41/ FP/0503-80-07.

42/ RB/0503-80-08.

43/ RB/0503-80-07.

44/ RB/0503-80-07.

120. An interagency meeting to revise the programme document for the implementation of the Caribbean Action Plan (Geneva, August 1980) produced a draft detailed document describing co-operative projects proposed as part of the Caribbean Environment Programme. The intergovernmental meeting to review and adopt the regional actional plan will be held in April 1981, 45/ and the results will be included in Addendum 5 to the present report.

4. The West African region

121. A meeting of Government-designated legal experts (Lome, 24-28 November 1980) finalized a draft Regional Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West African region and a draft Protocol Concerning Co-operation in Combating Pollution in Cases of Emergency 46/ (UNEP/FAO/IMCO). A plenipotentiary conference is planned for March 1981 and will be reported on in Addendum 5 hereto.

122. A UNESCO/UNEP meeting of experts (Dakar, 15-19 December 1980) reviewed information on river inputs to the West African region. 47/

123. Surveys of marine pollutants from industrial sources in the West African region, 48/ conducted by UNIDO and UNEP, and of oil pollution problems on the coast of the region, 49/ with particular emphasis on pollution from shipping, (IMCO/UNEP) were completed in December 1980.

5. The East Asian Seas 50/

124. A meeting of Government experts (Baguio, 17-21 June 1980) reviewed the draft East Asian Seas Action Plan and agreed upon a workplan for its implementation. Activities have been initiated concerning: assessment of oil pollution and its impact on living aquatic resources (FAO/IOC/UNEP); assessment of the level of heavy metals, chlorinated hydrocarbons (FAO/UNEP); and impact of pollution on the mangrove and coral reef ecosystems and on their productivity (FAO/UNESCO/IOC/IUCN/UNEP).

125. A second meeting of Government experts (Bangkok, 8-12 December 1980) further elaborated the draft Action Plan for the East Asian Seas and reviewed the process by which it will be implemented. The intergovernmental meeting to adopt the action plan will be held in April 1981, and the results reported in Addendum 5.

45/ FP/1000-77-01.

46/ FP/0503-79-19.

47/ FP/0503-79-20.

48/ FP/0503-79-18.

49/ FP/0503-79-17.

50/ FP/0503-80-05.

6. The South-West Pacific 51/

126. The Joint Co-ordinating Group held its second meeting in November 1980 to review progress in the preparations for the Regional Conference on Human Environment, which will review the report on the state of the Environment in the South-West Pacific and consider the adoption of a declaration of principles and a regional action plan (SPEC/SPC/ESCAP/UNEP).

7. The South-East Pacific 52/

127. Between March and October 1980 assistance was provided by CPPS, FAO, IOC and UNEP to ten national and regional marine institutions.

128. An overview on problems related to oil pollution of the region and a curriculum for a seminar/training course were completed in May 1980 (IMCO/CPPS/UNEP); other overviews on the sources, levels and effects of marine pollution in the region were published in Spanish, with English summary, in August 1980 (CPPS/UNEP). A directory of marine research institutions in the region was published in October 1980.

129. A draft action plan including environmental assessment (pollution monitoring and research programme) environmental legislation (regional convention, protocol on co-operation in cases of emergency) and supporting measures (institutional and financial arrangements) was prepared in June 1980 (CPPS/UNEP); the intergovernmental meeting to review and adopt the draft action plan will be held in August 1981.

8. The East African and South-West Atlantic regions

130. As a follow-up to Governing Council decision 8/13C of 29 April 1980, the East African and South-West Atlantic regions have been included in the Regional Seas Programme. A directory of marine research and development centres in East Africa is already being prepared in co-operation with ECA and UNESCO. Subject to availability of funds and expected co-operation from United Nations organizations, preliminary surveys of environmental problems of East Africa and South-West Atlantic regions will be prepared, and the first drafts of action plans for these regions will be formulated on the basis of these and of consultations with Governments.

P. ENERGY
(budget line 0700)

1. Energy and environment

131. The report on the environmental aspects of renewable sources of energy has been published in the UNEP Energy Report Series (ERS No. 7, 1980), 53/ and, together with the two studies on the environmental impacts of fossil fuels and nuclear energy (issued in UNEP Energy Report Series in 1979 and 1980), has been consolidated into a comprehensive report that is being published by a commercial publisher and will appear by May 1981

51/ FP/0503-79-15.

52/ FP/0503-80-02.

53/ FP/0700-78-03.

132. An international workshop on the environmental implications of expanded coal utilization (Moscow, 20-24 October 1980, in co-operation with the Biejer Institute (Stockholm) and the USSR Commission for UNEP) reviewed a draft report which is now being finalized by the Biejer Institute and UNEP and will be published in book form by a commercial publisher at the end of 1981. 54/

133. An international panel of experts (Munich, 17-27 November 1980) discussed the working papers prepared by UNEP on comparative assessment of the environmental impacts of different sources of energy; it recognized the difficulties encountered in such assessment and the great inadequacies in knowledge of the environmental impacts of some sources of energy, and commended UNEP for undertaking such a comprehensive and important study. The report on the comparative assessment is being prepared by UNEP and will be circulated to all members of the panel for comments before being finalized and published by mid-1981. 55/

2. Renewable sources of energy

134. The Experimental Rural Energy Centre in Sri Lanka is near completion. 56/ The wind energy component, the biogas plant and the photovoltaic system are fully operational and have been integrated to provide electricity to Pattiypola village. A comprehensive technical report is in preparation and will be published in June 1981.

135. A feasibility study for the establishment of an Experimental Rural Energy Centre in Senegal has been terminated and work has started to establish the Centre at Niaga Wolof. 57/

136. Wind energy, biogas and small-scale hydro-power have been used to provide energy to two remote villages in two islands in the Philippines. The installations have been completed and the equipment is being tested. A detailed technical report is in preparation and will be published in June 1981. 58/

137. A study conducted in co-operation with ALECSO of the feasibility of harnessing renewable sources of energy in the Arab region has been completed, and will be reviewed by an expert group meeting in April-May 1981. 59/

Q. NATURAL DISASTERS (budget line 1200)

138. The multi-agency memorandum of understanding on the environmental aspects of natural disasters 60/ has been signed by the executive heads of WFC and UNESCO in addition to those of UNEP, UNDRO, UNIDO, ILO, WHO and WMO.

54/ FP/0700-79-03.

55/ FP/0700-79-01.

56/ FP/0302-76-04.

57/ FP/0700-78-04.

58/ FP/0700-78-01.

59/ FP/0700-78-02.

60/ GC/INFORMATION/6/Add.2 and Corr.1.

139. Support was given 61/ to an International Seminar on Earthquake Prediction, organized by UNESCO, UNDRO, and the Regional Centre for Seismology for South America (San Juan, Argentina, 20-25 October 1980), the published proceedings of which should help reduce damage as a result of earthquakes, particularly in the countries of the ECLA region.

Chapter III

SUPPORTING MEASURES

A. ENVIRONMENTAL EDUCATION (budget sub-line 0305)

140. Under the UNESCO/UNEP project on the international programme on environmental education, 1/ the following achievements are recorded:

(a) Following those held in Africa, Latin America and the Caribbean (1979), a fourth regional training workshop took place at Bangkok in August 1980 for the orientation of key education personnel;

(b) Two 1980 publications, "Environmental education in the light of the Tbilisi Conference" and "Teachers' guide on environmental education", cover the declaration and recommendations of the Tbilisi Conference, the goals of environmental education, and strategies and modalities for its incorporation into the educational process and for international co-operation;

(c) An International Seminar on Education and Environment was organized at Budapest (November 1980);

(d) A meeting held in Botswana (May 1980) by the Science Education Programme in Africa (SEPA) reviewed 20 years of environmental science education in Africa and prepared the ground for a ten-year plan of action to consolidate and improve the environmental dimension of science teaching in the region. SEPA has successfully completed, inter alia, a regional pilot project on models for non-formal environmental education for out-of-school youths.

141. Scientists and educational experts from all regions of the world participated in a meeting of the IUCN Commission on Education (Vadstena, Sweden, August 1980), which formulated plans for implementing the education and training component of the World Conservation Strategy.

142. During the seventh biennial workshop/conference of the African Adult Education Association (Swaziland, July 1980) on the theme "Environmental education through adult education programmes", guidelines were developed for a training curriculum for adult educators incorporating environmental concerns.

143. Recent significant publications include: "Linking science education and the rural environment - some experiences" and "Using pre-primary education as a means for developing slum communities - a case study of 'Shanty Town' in Port-of-Spain, Trinidad", both by UNESCO.

1/ FP/0301-75-01.

B. ENVIRONMENTAL TRAINING
(budget sub-line 0306)

144. In the implementation of Governing Council decision 8/14 of 29 April 1980, concerning continuation of support to CIFCA on the basis of an agreement to be signed between Latin American and Caribbean countries and Spain, and the establishment of a network of training institutions in environmental issues and of an efficient mechanism to co-ordinate such a network, ad hoc meeting organized by UNEP (Montevideo, November 1980) adopted an agreement which requires a project document to be signed by the Government of Spain and UNEP and contains a resolution on the establishment of the network of high-level institutions.

145. An Expert Group Meeting of directors/managers of UNEP-supported environmental management training programmes 2/ (Nairobi, June 1980) reviewed the results achieved so far and determined priorities. The group recommended, inter alia, the preparation and wide dissemination of guidelines and source materials for the environmental training of development planners.

146. UNEP and ILO jointly convened, at Geneva in May 1980, the first meeting of workers' organizations 3/ on environmental policy, planning and programmes and the role of workers and employers and their organizations in this respect. The report of the meeting was noted by the ILO Governing Body (November 1980), and will be published together with an edited version of a discussion paper which was before the meeting.

147. A regional joint programming meeting on environmental training (Santiago, Chile, June 1980), organized by the UNEP Regional Office for Latin America, resulted in specific recommendations for inter-agency co-operation and the establishment of an Inter-Agency Working Group on Environmental Training which has started reviewing the progress made in the inventory of environmental training programmes and activities within the region.

C. INFORMATION
(budget sub-line 0303)

148. In the further development of established procedures for communicating environmental information to decision-makers and to the public at large, focus has been placed on the expansion of disseminator/producer networks by the six UNEP Regional Information Officers. 4/ The networks comprise correspondents serving as staff on mass communications organizations, including the International Press Service, the Press Institute of India, the Press Foundation of Asia, etc. The Regional Information Officers regularly supply the media with relevant material, directly or through the networks.

149. The Regional Information Officers are now responsible for regional liaison with non-governmental organizations (NGOs), and are currently integrating into the disseminator/producer networks those NGOs with the capability of "multiplying" environmental information.

150. In the ECWA region, a survey of principal communications media in the Arab world was produced. Translations into Arabic were completed for a basic information folder and an audio-visual presentation: "Desertification: its causes and some solutions". Environmental essay competitions for children were arranged in co-operation with the Governments of the Sudan and Tunisia.

2/ FP/0306-79-01.
3/ FP/0306-79-02.
4/ FP/0303-77-03.

151. In the African region, a briefing seminar for journalists was held and a quarterly publication, "Environment Africa", launched in December 1980.

152. The UNEP regional offices played a major role in activities for World Environment Day 1980, arranging and supervising the production of the state of the environment media pack in English, French, Spanish, German, Italian, Greek, Serbo-Croat, Turkish, Russian, and several Asian languages. Five thousand packs and additional specially targeted features were distributed, and extracts or adaptations were published by most of the leading media in each region.

153. The secretariat is progressing reasonably well in its attempts to achieve more speed, efficiency, and quality while clearing most of an accumulated backlog of publications, 5/ including the UNEP annual reviews.

154. Following the termination of the publishing contract with Pergamon Press, Mazingira magazine is now in a transitional phase, being printed by Irish Elsevier and co-ordinated by Biggs Holder of the United Kingdom. After five years of the magazine's existence, the Executive Director is now seriously reviewing the future of Mazingira.

155. The production of general information publications increased during period under review. The first two volumes in a new "Executive Series" were printed, while a number of publications in English, French and/or Spanish were issued or are currently in production. 6/ Meanwhile, negotiations are in progress with Viniti Publishing House in the USSR on the expansion of its programme of UNEP publications in Russian.

5/ FP/0303-76-01.

6/ Many have already been referred to in chapters I and II. Others are: UNITERRA; the state of the environment report 1980; "UNEP: What it is, what it does, how it works"; the UNEP annual review, 1978 and 1979 editions; a booklet entitled "Kenya - a commitment to conservation"; a series of six leaflets on environmental topics related to women, prepared for the International Conference on the Decade for Women; the Desertification Bulletin; Siren (the newsletter of the Regional Seas Programme Activity Centre); the Ozone Layer Bulletin;

Executive Series: "Environment and development: the basic texts"; "Choosing the options: Towards alternative lifestyles and patterns of development";

UNEP Studies (completion of the programme with Pergamon Press): "Environment and development in Africa"; "The child in the African environment";

UNEP Technical Series: Proceedings of the Workshop on Environmental Training and Research in African Universities;

UNEP Reference Series: Bibliography of publications issued by UNEP or under its auspices covering the period 1972-1980; "Biogas in China"; "Rain and storm water harvesting"; "Ecology and utilization of African inland waterways";

Publications programme in the USSR: the state of the environment reports 1979 and 1980; UNITERRA (nine issues); the Ozone Layer Bulletin; the INFOTERRA International Directory (five volumes) and Manual; "Effects of Weapons on ecosystems"; "Technology, development and environment - a reappraisal"; the UNEP annual reviews for 1978 and 1979; INFOTERRA Bulletin (August-October 1980).

156. ELC provided substantial support for information activities, and in particular for the 1980 World Environment Day campaign. A resource pack in the form of a 20-page newspaper on the basic theme "Development without destruction", including a reproduction of the winning entry in an international poster and cartoon contest co-ordinated by ELC, was widely distributed, with extracts reprinted in news publications in all six regions. ELC is maintaining contact with 6,500 NGOs round the world, and provides grants to selected NGOs in support of environmental and training projects.

157. With the direct support of UNEP, the United Nations Association of the United States of America continues to publish World Environment Report. With similar support the IIED's Earthscan produced 27 regular and special (Radio and TV) environment features in English, French and/or Spanish; circulated two issues of the Earthscan Bulletin, in English, French, Spanish and German, to a total of 1,043 NGOs; held a journalists' briefing seminar to help launch the International Drinking Water Supply and Sanitation Decade and provided information services in support of UNEP's Regional Seas Programme Activity Centre, producing one of four major briefing documents on the history of the Kuwait Action Plan and on pollution in the region.

158. For a listing of films, slide/tape presentations, audio-tapes and exhibits prepared under the audio-visual support project, 7/ see Report to Governments No. 24.

D. TECHNICAL ASSISTANCE (budget sub-line 0302)

159. Technical assistance is an important component of the activities carried out under other subject areas. Specific technical assistance activities include projects implemented directly by headquarters, provision of regional advisory services by the UNEP Regional and Liaison Offices, and support to the Environmental Co-ordination Units in each of the United Nations regional commissions.

160. The regional advisory services 8/ have:

(a) In the Asia and Pacific region, provided assistance in the formulation of the ASEAN sub-regional environmental impact assessment for decision-makers (Philippines, June 1980), case studies in environmental assessment in ASEAN countries, setting-up environmental quality standards and monitoring of pollution levels, the formulation of a syllabus for training in environmental management in Pakistan and the formulation of a national programme for environmental pollution management in Burma, and participated in a high-level mission to Afghanistan, Bhutan, Maldives and Burma within the South Asia Co-operative Environment Programme;

(b) In the Latin American region, provided assistance in the introduction of environmental dimensions in the development planning of Peru, an analysis of satisfaction of basic human needs in Nicaragua, and evaluation of a project on environmental macrosystems in Venezuela;

7/ FP/0303-77-01.

8/ FP/0302-75-12.

(c) In the West Asian region, provided advisory services on environmental surveys, and on industrial and marine pollution;

(d) In the African region, provided seven consultancies for the Governments of Liberia, Libyan Arab Jamahiriya, Morocco, Rwanda and United Republic of Tanzania to advise on specific subjects including pollution control, integrated approach to re-afforestation and the Mount Kilimanjaro ecosystem.

161. The Environmental Co-ordination Units ^{9/} continued their co-ordinating activities within their respective regions. Their activities, which have been the subject of external evaluation, include: formulation of project proposals aiming at incorporating environmental concerns in the commissions' activities; supervision of implementation of Fund-supported projects with the commissions; publication of various documents, e.g. proceedings of regional seminars with UNEP, papers on environmental considerations of development and combating desertification control; and provision of information on the state of the environment and on environmental activities in the regions.

^{9/} FP/0302-77-02, FP/0302-77-03, FP/0302-77-04, FP/0302-78-01, FP/0302-78-02.

Chapter IV

ENVIRONMENTAL MANAGEMENT INCLUDING ENVIRONMENTAL LAW

A. ENVIRONMENTAL LAW
(budget sub-line 1002)

162. The register of multilateral conventions and protocols in the field of the environment, containing full texts of the instruments summarized in UNEP/GC/INF.5 and its supplements, will be published in English and French. Copies will be available in August or September 1981.

163. The Working Group of Experts on Environmental Law continued at its sixth and seventh sessions the study of the legal aspects of preventive and remedial measures for pollution arising from offshore mining and drilling activities carried out within the limits of national jurisdiction. The Group expected to complete its work at its eighth session (February 1981), and to approve a set of guidelines for use by Governments in preparing appropriate national or international legislative action. Further information will be provided in Addendum 5 to the present report.

164. Pursuant to General Assembly resolution 34/186 of 18 December 1979, follow-up activities for the implementation of the principles for the conduct of States in respect of shared natural resources have been initiated in the form of an analysis or selected conventions related to shared natural resources in order to ascertain the extent to which the principles are already being utilized. The outcome of the study is reported in Addendum 2 to the present report, and more fully in UNEP/GC.9/BACKGROUND PAPER/1.

165. A UNEP/ECA Seminar on the Development of Environmental Protection Legislation was held (Addis Ababa, 29 September - 3 October 1980). The report of the meeting (E/CN.14/784) will be available to the Council.

166. In accordance with Governing Council decision 8/15 of 29 April 1980, preparation of background documents for the proposed Ad Hoc Meeting of Senior Level Officials Expert in Environmental Law has been initiated. In this connexion, an informal consultative meeting on environmental law (Ottawa, 5-7 November 1980) was convened by the Government of Canada to assist UNEP in the preparation for the Ad Hoc Meeting by holding consultations among Governments from various regions on both substantive and organizational matters. The meeting was attended by representatives of Canada, Germany, Federal Republic of, India, Indonesia, Japan, Kenya, Mexico, Netherlands, Senegal, Sweden, Uruguay, Union of Soviet Socialist Republics, United States of America and Venezuela, UNEP and CEC, and by the Chairman of the seventh session of the Working Group of Experts on Environmental Law. The meeting considered and commented on the draft in-depth review on environmental law (available to the Council as UNEP Report No. 2 (1981)), which in accordance with decision 8/15 will be transmitted together with other background documentation for the Ad Hoc Meeting to the Working Group of Experts for examination. It also prepared a non-exhaustive list of environmental law elements of a programme, consisting of global, regional and national efforts, to be considered by the Ad Hoc Meeting, and agreed that marine pollution from land-based sources, protection of the ozone layer and disposal of hazardous wastes could be susceptible to priority treatment at the global level. With regard to organizational aspects of the Ad Hoc Meeting, the meeting discussed among others its dates and venue, the composition of the Working Group of Experts on Environmental Law which was to meet as the preparatory committee for the Meeting, and the possibility of using a lead country approach in the preparation of selected priority topics.

B. ENVIRONMENTAL MANAGEMENT
(budget sub-line 1001)

167. Apart from the developments in regard to methodologies for environmental management noted here, considerable work has been carried out and experience gained in various sectors of the environment programme, particularly the Regional Seas Programme, in the application of principles and tools of sound environmental management.

168. UNEP's programme of action on the cost-benefit evaluation of environmental protection measures was considered by the third intergovernmental expert group meeting (Paris, November 1980) as having reached the end of a first phase with the attainment of two inter-related goals, those of bringing to the attention of member States the desirability of carrying out extended cost-benefit analysis as a major aid in environmental decision-making, and of demonstrating through a properly classified compendium of case studies the range and scope of sound and proven techniques and analytical tools currently available for carrying out such studies. The meeting recommended the early publication and wide dissemination of the material collected and of the insights gained during this first phase. 1/ It further recommended that UNEP should now consider the practical application of the techniques and analytical tools of cost-benefit analysis through the development of three projects concerned with tropical deforestation, desertification and large river basin development, and through more extended work dealing with the allocation of environmental resources.

169. Under a joint UNEP/UNDP project, 2/ operational guidelines for the inclusion of environmental consideration in development activities have been prepared, in co-operation with FAO and other specialized agencies, for the pulp and paper industry, the hides and skins industry, watershed management, irrigation in arid and semi-arid areas, use of pesticides on industrial crops, and coastal tourism. The guidelines were circulated by UNDP to resident representatives in order to obtain an assessment of their practical utility at the field level, and were examined by the Designated Officials for Environmental Matters in December 1980. Advice will also be obtained from field officers and project personnel of UNDP and the World Bank before further action is decided on.

170. As a preliminary step in a programme of work to develop a simplified and cost-effective format for environmental impact assessment statements, the UNEP regional offices are conducting surveys of current practices in their regions. Reports have been prepared for the ESCAP and ECE regions, and a position paper on the nature and scope of the programme of work has been discussed with UNDP and other international organizations.

171. The signatories to the Declaration of Principles on the incorporation of environmental concerns in development policies, programmes and projects have established a formal review mechanism, the Committee of International Development Institutions for the Environment. At its first meeting, held at the headquarters of the Caribbean Development Bank (Barbados, June 1980), the

1/ A three-volume publication is currently under preparation for the purpose, entitled "The role of cost-benefit analysis in environmental decision-making".

2/ FP/1001-79-02.

Committee discussed the institutional and personnel difficulties in implementing the Declaration, 3/ and established an Interim Working Group Committee which met in New York in December 1980 and discussed liaison with bilateral aid agencies to secure co-operation in work programmes, and development of inter-institutional co-operative efforts. The next meeting of the Committee is scheduled to be held at the headquarters of the African Development Bank, Abidjan, in June 1981.

172. A study of the environmental implications of the Salto Grande multi-purpose hydraulic development scheme 4/ has been conducted by the Salto Grande Joint Technical Commission, with UNEP support, aimed at ensuring environmental protection and the application of technologies consistent with the environmental and development policies of Argentina and Uruguay. The study provides an insight into methodologies, particularly environmental impact assessment methodologies, applied during different stages of the scheme's implementation, as well as information on experience which may be applicable elsewhere.

173. The issue of environmental management, particularly the adaptation of environmental impact assessment as a management tool, has aroused much interest among member countries of ASEAN (Indonesia, Malaysia, Philippines, Singapore and Thailand), and a joint ASEAN/UNEP workshop on the subject took place at Baguio, Philippines in June 1980.

3/ The report of the Barbados meeting is available as document UNEP/WG.50/1.

4/ FP/1000-78-02.

Annex

SUGGESTED ACTION BY THE GOVERNING COUNCIL

The Governing Council may wish to give consideration to:

- (a) Taking note of the report;
- (b) Expressing its views on the INFOTERRA evaluation report's recommendations (para. 26);
- (c) Approving the revised objectives and strategies for assessment of basic human needs in relation to outer limits;
- (d) Recommending that the assessment activities listed in paragraph 18 be pursued vigorously.
