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THE ENVIRONMENT PROGRAMME: PROGRAMME
PERFORMANCE REPORT

Report of the Executive Director

The present document reports on the progress that has been achieved between May and December 1981 in the implementation of the environment programme. Achievements between 1 January and 31 March 1982 will be described in UNEP/GC.10/5/Add.4.

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LIST OF ABBREVIATIONS

| | |
|---------|---|
| ACC | Administrative Committee on Co-ordination |
| APDC | Asia and Pacific Development Commission |
| ASEAN | Association of South-East Asian Nations |
| BAPMoN | Background Air Pollution Monitoring Network |
| BBC | British Broadcasting Corporation |
| CDA | Capital Development Authority (Dodoma) |
| CEFIGRE | International Training Centre for Water Resources Management |
| CFCs | Chlorofluorocarbons |
| CGIAR | Consultative Group on International Agricultural Research (FAO/UNDP/World Bank) |
| CIFCA | International Centre for Training in Environmental Sciences for Spanish-speaking countries |
| CMC | Conservation Monitoring Centre (IUCN) |
| CPPS | Permanent Commission for the South Pacific |
| ECA | Economic Commission for Africa |
| ECE | Economic Commission for Europe |
| ECG | Ecosystems Conservation Group |
| ECLA | Economic Commission for Latin America |
| ECWA | Economic Commission for West Asia |
| EMEP | European Monitoring and Evaluation Programme (UNEP, WHO, ECE) |
| ENDA | Environment and Development in the Third World |
| ESCAP | Economic and Social Commission for Asia and the Pacific |
| FAO | Food and Agriculture Organization of the United Nations |
| GEMS | Global Environmental Monitoring System |
| GESAMP | Joint Group of Experts on the Scientific Aspects of Marine Pollution |
| 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 |
| IFIAS | International Federation of Institutes for Advanced Study |
| IHP | International Hydrological Programme |
| IIASA | International Institute for Applied Systems Analysis |
| ILO | International Labour Organisation |
| IMCO | Inter-Governmental Maritime Consultative Organization |
| INFOTERRA | International Referral System for sources of environmental information (UNEP) |
| INRES | Information Referral System (UNDP) |
| IPCS | International Programme on Chemical Safety |
| IPIECA | International Petroleum Industry Environmental Conservation Association |
| IRPTC | International Register of Potentially Toxic Chemicals (UNEP) |
| ISSS | International Society of Soil Science |
| IUCN | International Union for the Conservation of Nature and Natural Resources |
| IWC | International Whaling Commission |
| MAB | Man and the Biosphere Programme (UNESCO) |
| MAP | Mediterranean Action Plan |
| MARC | Monitoring and Assessment Research Centre (Chelsea College) |
| MED-POL | Co-ordinated Mediterranean Pollution Monitoring and Research Programme |
| MIRCENS | Microbiological Resources Centres |
| NBA | Niger Basin Authority |
| NGOs | Non-governmental Organizations |
| OECD | Organization for Economic Co-operation and Development |
| PAHO | Pan-American Health Organization |

| | |
|---------|---|
| PBS | Public Broadcasting System |
| PCBs | Polychlorinated biphenyls |
| PEP | Precipitation Enhancement Project (WMO, UNEP) |
| PEPAS | Western Pacific Regional Centre for the Promotion of Environmental Planning and Applied Studies |
| ROPME | Regional Organization for the Protection of the Marine Environment |
| SCOPE | Scientific Committee on Problems of the Environment |
| SIDA | Swedish International Development Authority |
| SPC | South Pacific Commission |
| SPEC | South Pacific Bureau for Economic Co-operation |
| TOPEX | Typhoon Operational Experiment |
| UNCHS | United Nations Centre for Human Settlements (Habitat) |
| UNDP | United Nations Development Programme |
| UNDRO | United Nations Disaster Relief |
| UNEP | United Nations Environment Programme |
| UNEPCOM | USSR Commission for UNEP Affairs |
| UNHCR | Office of the United Nations High Commissioner for Refugees |
| UNIDO | United Nations Industrial Development Organization |
| UNITAR | United Nations Institute for Training and Research |
| UNSO | United Nations Statistical Office |
| WCIP | World Climate Impact Studies Programme (WCP) |
| WCP | World Climate Programme (WMO) |
| WCRP | World Climate Research Programme (WCP) |
| WFEO | World Federation of Engineering Organizations |
| WFP | World Food Programme |
| WHO | World Health Organization |
| WMO | World Meteorological Organization |
| WWF | World Wildlife Fund |

INTRODUCTION

1. The programme performance report and its addenda describe the progress achieved in the field of the environment in the implementation of the approved workplans and decisions of the Governing Council.
2. Although the presentation is concise, an effort has been made to provide as much information as possible, focusing on results, including recommendations, and the impact - positive 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. In keeping with the format of last year's report, the contents are arranged under four chapter headings: 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 had three chapters: environmental assessment; environmental management; and supporting measures.
4. Consolidated achievements in the implementation of the 21 goals for 1982, originally approved by the Governing Council in decision 82 (V) and subsequently amended, are reported in document UNEP/GC.10/6. Consequently they have not been repeated in the present document, although they are pertinent to most of the subjects dealt with herein.

I. ENVIRONMENTAL ASSESSMENT

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

I. Resource monitoring

5. The global tropical forest resource assessment, 1/ undertaken with FAO, has been completed and published for the three regions of Africa, Asia and Latin America. 2/ The assessment provides a unique baseline from which to keep a continuing watch on the fate of the world's tropical forests. It covers estimates of forest cover by type, current production figures, assessment of species associations, economic indicators and trends. Although the rate of forest clearing varies from place to place and type to type, the average figure for dense forest and open forest is approximately 0.6 per cent per annum, which if continued linearly would result in a 10 per cent decrease of these types by the year 2000.

6. As part of the effort to improve and standardize methodologies within the GEMS renewable resource monitoring programme, the proceedings of two seminar/meetings have been published: one contains a compilation of the views and methodologies of major practitioners of aerial monitoring of natural resources, 3/ and the other presents the latest methodologies for the Arab world in monitoring both natural resources and remotely sensed pollution. 4/

7. UNEP co-sponsored the United Nations Seminar on Remote Sensing Applications in Geology and Hydrology (Baku, USSR, November 1980), 5/ which provided lectures and practical training in data acquisition and analysis. The final report is being prepared by the Outer Space Affairs Division, United Nations Headquarters.

1/ FP/1301-78-04.

2/ Tropical forest resources assessment project: Forest resources of tropical Asia; Forest resources of tropical Africa (2 vols.); Los recursos forestales de la America Tropical. FAO (1981).

3/ (1981) Low-level aerial survey techniques. Report of a UNEP/ILCA/Government of Kenya International Workshop, November 1979, Nairobi. ILCA Monograph 4.

4/ (1981) Proceedings of the Seminar on Environmental Monitoring for the Arab World. ADI, FASRC, RSS, UNEP. Amman: Royal Scientific Society.

5/ FP/1301-80-02.

8. The pilot project for inventory and monitoring of Sahelian pastoral ecosystems, 6/ carried out in co-operation with FAO, has completed two more series of systematic reconnaissance flights over the 30,000 km² study area in Senegal. The data thus obtained, coupled with ground work and satellite imagery analysis, are providing insights into the functioning of the pastoral ecosystems and hence key information for their optimal management.

9. A project on the use of modern remote sensing techniques in monitoring desertification was initiated in Egypt 7/ to establish an ecological monitoring unit for assessing the productivity of areas of Egypt vulnerable to desertification. The monitoring will cover geological structure, soils, drainage, soil degradation, vegetation, animal and human population distribution and abundance. The project will concentrate on developing techniques that rely mainly on low-cost remote sensing from earth resource assessment satellites.

10. The species data base of the IUCN Conservation Monitoring Centre (CMC) at Cambridge is operational (cf. budget subline 1110), and continues to compile up-dated information on species listed in the Red Data Book. Data on most of the species of endangered mammals, many of the plants and a good portion of the birds, reptiles and amphibians have been filed on the Centre's computer at Kew Gardens, London. The new standard species assessments (homologues of the old Red Data Book pages) are based on sound scientific criteria, and it will soon be possible to produce specific area species status assessments for national and regional planners. The activities of CMC are now regarded as falling under GEMS.

2. Climate-related monitoring

11. Activities have continued under the UNEP/WMO climate-related monitoring project 8/ and its eight subprojects. In co-ordination with the World Climate Programme, a number of expert meetings and consultant missions were organized to develop detailed requirements for climate-related monitoring in the atmosphere, hydrosphere and biosphere. The outcome of these meetings formed the basis for a background document 9/ circulated in preparation for a Government Expert Meeting on Climate-Related Monitoring, to be held at Geneva in early 1982 in co-operation between WMO and UNEP.

6/ FP/1301-79-01.

7/ FP/1301-80-02.

8/ FP/1301-80-01.

9/ UNEP/WMO (1981) Review of GEMS climate related monitoring: Achievements and future activities.

12. Assessments made by independent scientists of the data gathered under the sub-project on monitoring background air-pollution, in particular on data available up to 1979 on chemical composition of precipitation, 10/ and CO₂ in the atmosphere, 11/ indicate, in general, a deteriorating situation. There has been an apparently general increase of pH in rain, but the data are highly variable and require increased station coverage and a longer period of collection. Increases in sulphate concentrations are apparent; for example, an average of the order of 1 mg/l between 1976 and 1978 in both Europe and North America. Data collected in 1979, however, showed a drop in concentration in the United States of America and an increase in Europe. Again, more stations and a longer data run are required before firm, long-term conclusions can be reached. Turbidity data are considered important constituents in climate research and monitoring, but require improved instrumentation. With respect to atmospheric CO₂, all baseline stations show the same trends, and the longer records indicate an increase of ca. 1 ppm per year against a background level of ca. 300 ppm. The rate of increase is consistent with that of the release of anthropogenic CO₂.

3. Health-related monitoring

(a) Air pollution monitoring in urban and industrial areas (in co-operation with WHO and WMO)

13. The activity 12/ has continued on schedule. At present, some 50 countries (75 cities) are participating in it. The third data report, which has been published, 13/ contains data on sulphur dioxide and suspended particulate matter, and presents the results of a comparison study done at Calcutta, India. A further report covering the data collected in 1979-1980 is being published. Continuing the series of related training activities initiated in 1977, two workshops on air quality management were held in 1981, one in Malaysia and the other in China.

10/ Georgii, W. (1981) Updated review of the Chemical Composition of Precipitation as analysed by the WMO network (WMO Report).

11/ Manning, G. (1981) An Assessment of BAPMoN data currently available on the concentration of CO₂ in the atmosphere (WMO Report).

12/ FP/1301-75-03.

13/ "Air Quality in Urban Areas: 1977-1978", WHO Offset Publication No. 57.

(b) Global water-quality monitoring 14/ (in co-operation with WHO, WMO, UNESCO)

14. As of mid-1981, 286 monitoring stations had been designated and of these, 166 in 33 countries had started reporting data which are now in press. With the support of the Collaborating Centres in Japan, the United Kingdom of Great Britain and Northern Ireland and the United States of America, quality control procedures are being introduced and centrally prepared reference samples are being distributed to all participating laboratories. In December 1981, a training course for English-speaking African countries, similar to the one held earlier in the year for French-speaking African countries, was held at Nairobi. A workshop on quality control was also held in December 1981, at Nagpur, India. With the completion of this course, the start of data reporting by some 40 Indian stations and direct computer transfer programming involving about 50 stations in the United Kingdom and the United States of America, the goals of the first phase of the programme will have been largely achieved.

(c) Food and animal feed contamination monitoring 15/ (in co-operation with WHO and FAO)

15. Of the 23 countries with designated collaborating centres, 20 have submitted data on organochlorine pesticides and polychlorinated biphenyls (PCBs), lead, cadmium and aflatoxins in some 330 categories of foodstuffs. The Technical Advisory Committee on Food and Animal Feed Contamination Monitoring, which last met in April 1981, reviewed and evaluated the data and made recommendations for the further development of the programme, emphasizing in particular the need to ensure the participation of a larger number of developing countries, particularly in view of their varying requirements for food intake. 16/

(d) Assessment of human exposure to pollutants through biological monitoring 17/ (in co-operation with WHO)

16. Ten and eleven countries now participate in the metal and organochlorine compounds components of this pilot activity respectively. Consultations for each component were held in December 1981 at Geneva and Zagreb. The metal component of the project has now been completed. Both lead and cadmium were measured in human blood, and cadmium in renal cortex as well. Rigorously controlled procedures were established to ensure the quality of the results, both at the sampling and at the analytical stage. At the end of the first phase all laboratories performed satisfactorily. The monitoring phase revealed wide differences in the average blood levels of lead between areas. Less pronounced

14/ FP/1301-76-05.

15/ FP/1301-76-03.

16/ Report of the second session of the Technical Advisory Committee (document WHO-EFP/81.15).

17/ FP/1301-78-06.

differences were observed in cadmium concentrations in blood and these correlated positively with the differences observed in renal cortex. Systematically higher levels of cadmium were observed in smokers as compared to non-smokers, but no differences were noted between the sexes. A detailed report of the project is in press. The organochlorine compound is confined to measurements of three pesticides and of PCBs in human milk. As in the case of cadmium and lead, a preliminary phase of quality assurance is under way; monitoring activities are expected to commence in early 1982 and to be completed by July of the same year.

(e) Assessment of human exposure to air pollutants 18/ (in co-operation with WHO and WMO)

17. This pilot activity, which aims at determining the actual amounts of air pollutants to which man is exposed in his living environment, is being conducted through four separate studies in regions of differing climatic conditions, pollution patterns and life styles. Two studies - Toronto and Zagreb - will be completed by the end of 1981; the reports will be available in mid-1982. A third study - Bombay - has just been initiated, and plans for a fourth, to be conducted in China, are currently being developed. Guidelines for estimating human exposure to air pollutants have been prepared, and will be published in early 1982.

4. Long-range transport of pollutants

18. The activities concerning long-range transmission of air pollutants fall within the European Monitoring and Evaluation Programme (EMEP) under the joint auspices of UNEP, WMO and the ECE, and comprise three closely related UNEP projects. 19/ Data have been accumulating for two years from stations in 28 countries within the European study grid. Comparisons between calculations of transboundary fluxes made at the eastern and western Meteorological Synthesizing Centres show substantial agreement, and predicted values from concentration models match well with observed values, particularly in the winter. 20/ The addition of a variable mixing height into the model should improve the model's summer performance.

18/ FP/1301-78-03.

19/ Co-operative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe (Chemical Part), FP/1301-77-02; Co-operative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe (Meteorological Part - West European Centre), FP/1301-78-05; Co-operative programme for monitoring and evaluation of the long-range transmission of air pollutants in Europe (Meteorological Part - East European Centre), FP/1301-79-02.

20/ EMEP (1981) Fourth routine technical report from the Western Meteorological Synthesizing Centre. EMEP/MS-C-W Report 1/81.

5. Research and development

19. The GEMS activities with the Monitoring and Assessment Research Centre (MARC) of Chelsea College are continuing. Additional attention is being paid to exposure to non-human targets, and further publications have been produced in the MARC report series. 21/

B. INFOTERRA
(budget sub-line 1302)

20. Three new partner countries have joined INFOTERRA, bringing the total to 116. Seven hundred new sources were added to the INFOTERRA Directory, which now has a total of 9200 sources from 81 countries. The use rate continues to be maintained at about 350 referrals per month.

21. A sub-regional INFOTERRA focal point development workshop was held for Caribbean countries (Kingston, 31 August - 4 September 1981). The participants agreed, among other things, to initiate at their own expense a pilot project for one year whereby each national focal point will concentrate on improving its own operations, while the United States national focal point will provide computer and documentation support services to them. The feasibility of using satellite communication for conducting INFOTERRA operation in the region will be investigated.

22. An INFOTERRA Management meeting for the African region, attended by 36 national focal point managers (Nairobi, 25-27 November 1981), helped continue the development and consolidation of INFOTERRA in the region and further strengthened regional co-operation in environmental information exchange.

23. Training courses for national focal point staff were organized at Dakar (31 August - 4 September 1981) and Nairobi (14-18 September 1981 and 30 November to 1 December 1981). The Dakar training course was attended by technical-level focal point staff from seven French-speaking countries, and provided practical training in all aspects of INFOTERRA operations. The Nairobi courses offered similar training to focal points staff from seven English-speaking and six French-speaking countries. INFOTERRA training courses increasingly cover procedures for substantive information delivery.

24. As part of the network development programme, INFOTERRA staff or consultants visited 21 countries and provided technical advice to national focal points on specific procedural and policy-related matters. In response to Governing Council decision 9/10 D, national focal points were encouraged to provide services beyond referral to their users. Fulfilment of this objective will require strengthened support by Governments for their national focal points.

21/ Bennett, B.G. (1981) Exposure Commitment Assessments of Environmental Pollutants Volume 1, Number 1. MARC Report No. 23.
Piotrowski, J.K. and Inskip, M.J. (1981) Health Effects of Methylmercury. MARC Report No. 24. Bennett, B.G. (1981) Exposure Commitment Assessments of Environmental Pollutants Volume 1, Number 2. MARC Report No. 25.

25. Also in response to the above decision, discussions were held during the year with various agencies to develop interagency co-operative programmes on information exchange. Formal agreements have been made with UNESCO (on training, terminology and services beyond referral) and UNDP (national level co-ordination with INRES, terminology development and exchange of data bases and software). In the Latin American and Caribbean region, INFOTERRA and the UNEP Regional Office for Latin America collaborated with ECLA, PAHO and other agency systems to develop a regional programme for the further consolidation of environment information systems.

26. The INFOTERRA Task Force on Terminology (Nairobi, 16-20 November 1981) agreed on the coverage, level of detail, degree of structuring, etc. for the proposed new attribute list.

27. Three special directories were produced in addition to the regular INFOTERRA International Directory, on new and renewable energy sources, conservation for sustainable development, and drinking water supply and sanitation.

C. INTERNATIONAL REGISTER OF POTENTIALLY TOXIC CHEMICALS (IRPTC)
(budget sub-line 1304).

28. At the end of December 1981, 98 national correspondents had been appointed by 90 countries with the following regional distribution:

| Africa | | Asia & the Pacific | | Europe & N. America | | Latin America | | West Asia | | TOTAL | |
|------------|------------|--------------------|------------|---------------------|------------|---------------|------------|------------|------------|------------|------------|
| Coun-tries | No. of NCs | Coun-tries | No. of NCs | Coun-tries | No. of NCs | Coun-tries | No. of NCs | Coun-tries | No. of NCs | Coun-tries | No. of NCs |
| 21 | 23 | 19 | 23 | 23 | 25 | 19 | 19 | 8 | 8 | 90 | 98 |

29. Information on the toxicity, use and regulations of chemicals was provided in response to 40 requests. To date 250 data profiles for selected chemicals have been prepared in co-operation with network partners and national correspondents and are stored in the IRPTC data base; they are available for distribution. A Register Index indicating fields of chemicals for which data are available, together with detailed revised instructions for the presentation and use of data profiles, has been published by UNEP. ^{22/}

^{22/} International Register of Potentially Toxic Chemicals, Part A Geneva, 1981.

30. In August, IRPTC Bulletin volume 4, No. 2 was published. It contained information on formaldehyde, acrylonitrile, benzene, organo-phosphorous pesticides, and many other chemicals of concern. It also covered legislative measures on control of chemicals from Belgium, Canada, Netherlands, United Kingdom and United States of America, and described activities of international and national organizations as well as those of UNEP.
31. A workshop for national correspondents of the Latin American region (Mexico City, 23-27 November 1981) attended by 16 countries recommended increased frequency of publication of the IRPTC Bulletin, strengthening of IRPTC's data-handling capabilities and the production of data profiles, including legal and regulatory data, the holding of training workshops by IRPTC to assist countries in establishing national registers of potentially toxic chemicals, and IRPTC support for the holding of small intra-regional technical meetings among countries with a common interest in certain aspects of chemical hazard control. The report of the Workshop is available from the IRPTC Programme Activity Centre in English and Spanish.
32. An Expert Meeting on Basic Principles of Definition of Toxicological and Safety Data for Chemical Substances in International Trade (Leningrad, 22-27 June 1981) agreed on the type of data which should accompany a chemical substance entering an importing country, including basic properties of that substance and handling techniques in case of accidents. The experts also recommended that a high-level meeting be convened to harmonize notification procedures for chemical substances traded internationally. The report of the meeting is available in English and Russian.
33. The postgraduate training of seven specialists from developing countries was initiated in March 1981 in several USSR research institutions. The introductory part of the 10-month programme in toxicology and related fields has been completed, and practical training in research and legislative measures to control toxic chemicals is under way in accordance with individual training programmes.
34. IRPTC co-operates closely with the International Programme on Chemical Safety (IPCS). It has become actively involved in the collection, storage and dissemination of data on chemicals which are not readily accessible to the national institutions carrying out health risk evaluation of chemicals at the request of IPCS. Working relations have been established with thirteen lead institutions. Memoranda of understanding on co-operation with IPCS have been signed by nine countries, and negotiations are in progress with another ten countries.
35. Two Ad Hoc Advisory Group Meetings were organized by IPCS with the participation of IRPTC (Leningrad, 28-30 June and Geneva, 14-16 September 1981) to review the present and proposed IPCS activities related to methodology for evaluating effects of environmental chemicals during the intrauterine period of life, and on the nervous system. The workplans were developed by the advisory groups for the preparation of two monographs, "Methods for the integrated evaluation of risks for progeny associated with prenatal exposure to chemicals" and "Methods for the evaluation of nervous system toxicity associated with exposure to chemicals".

36. An Ad Hoc Working Group organized by the Central Unit of IPCS (Geneva, 28-30 October 1981) concluded that the strengthening of WHO's contribution to the Joint Expert Committee on Food Additives and the Joint Meeting on Pesticide Residues activities within the IPCS was needed and a number of organizational, operational and budgetary recommendations were made.

37. On the basis of consultations and regional meetings with the Designated Bodies of the International Occupational Safety and Health Hazards Alert System of the International Labour Office, the description of the system and its operational procedures was formulated and discussed at the 218th session of the Governing Body (Geneva, 17-20 November 1981). A number of recommendations ^{23/} were made on the further development and procedures for the operation of the Alert System such as: types and the main purpose of communications which might be circulated in the System, and the possibility of assessment of alerts.

38. The Council of the Organisation for Economic Co-operation and Development (OECD) recommended the use of the guidelines for testing of chemicals, and adopted a decision on mutual acceptance of data and principles of good laboratory practice. OECD is now establishing contacts with other intergovernmental organizations to investigate a wider application of the guidelines.

39. In response to Governing Council decision 9/6 a list of dangerous chemical substances was prepared in consultation with experts and relevant United Nations bodies, and is available as document UNEP/GC.10/5/Add.3.

40. In response to Governing Council decision 8/8, on transboundary transport and disposal of hazardous chemical wastes, a joint UNEP/WHO document entitled "Management of hazardous waste - Policy guidelines and code of practice" is being finalized for publication in mid-1982. A summary of the document will be available at the tenth session of the Governing Council.

D. OUTER LIMITS

(budget sub-line 1303)

1. Risks to the ozone layer

41. In response to Governing Council decision 9/13 B, UNEP in consultation with Governments and intergovernmental organizations has established an Ad Hoc working group of legal and technical experts for the elaboration of a global framework convention for the protection of the ozone layer. A report on the work of the Ad Hoc working group will appear in document UNEP/GC.10/5/Add.4.

^{23/} GB 218/21/6: Report of the Director-General. Third Supplementary Report: Development of the Occupational Safety and Health Hazard Alert System, Geneva, 17-20 November 1981.

42. Again in accordance with the above decision, UNEP, through the Co-ordinating Committee on the Ozone Layer, is compiling relevant information, including statistical and technical data, on the implementation of the recommendations contained in decision 8/7 B of 29 April 1980, in particular that information relating to reduction in the use of chlorofluorocarbons (CFCs) 11 and 12, as well as to production capacity on the basis of an agreed definition. Thirteen countries have so far supplied relevant information to UNEP, and a further four have acknowledged the UNEP request. In addition, 14 replies to the Executive Director's letter of 3 July 1980 concerning decision 8/7 B to consider ways of accelerating international co-operation on the subject have been received. The majority of countries expressed readiness to control CFC emissions, while several supported the idea of a global framework convention for the protection of the ozone layer.

43. At its fifth session (Copenhagen, 12 to 16 October 1981) the Co-ordinating Committee on the Ozone Layer examined the contributions presented to it by various countries and organizations and concluded that a risk of depletion of the ozone layer due to CFC releases is still most likely, although natural variations and other compounds which may affect ozone require increased consideration. Considering CFCs 11 and 12 alone, at their present rate of release, it was estimated that an eventual ozone reduction in the range of 5 to 10 per cent would occur. However, if releases of other chlorocarbons also continued at present rates, they could increase this estimate by about one third. The Committee estimated that present total column ozone depletion is less than one per cent, which is below the present detection limit. It was noted that world production of CFC 11 and 12 had fallen by 18 per cent between 1974 and 1980 but by only 1 per cent in the last year. It was recognized that eventually, reduction of CFC use in aerosols could be offset by growth in non-aerosol uses, and there were also indications of increased production of other chlorine containing compounds which could affect the ozone layer.

44. The Committee also made 28 specific recommendations concerning research and monitoring for future action, and, in accordance with decision 9/13 B submitted the report of its fifth session to the Ad Hoc working group of legal/technical experts (para. 41 above), drawing the attention of the Ad Hoc working group to important aspects it should consider in elaborating a framework convention.

2. Weather modification

45. As requested by the Governing Council in decision 8/17 A the Secretary-General of the World Meteorological Organization has forwarded to the Executive Director of UNEP a register of national weather modification experiments and operations sponsored by governmental agencies and private concerns that took place in 1980. On-going weather modification projects were reported by 27 countries while a further fifty replied that no such activities were currently being undertaken.

46. The final on-site measurements under the Precipitation Enhancement Project (PEP) 24/ have been carried out in Spain. An assessment of the site selection programme data has been made to determine if the site in Spain is suitable for the next phase of the PEP programme and if not, to consider alternative courses of action. These results will be reviewed by the PEP Board in May 1982.

3. World Climate Impact Studies Programme (WCIP)

47. As part of the UNEP/SCOPE project 25/ to improve the methodology of climate impact studies, a joint meeting of authors of the proposed scientific review papers and the Scientific Advisory Committee was held at Toronto, Canada in September 1981. Overview papers are being prepared by the authors for presentation at the SCOPE General Assembly in May 1982.

48. An ad hoc meeting of a group of climate modellers and agro-climatologists (Stockholm, 13-14 August 1981) recommended that an ad hoc committee on crop-climate interactions should be established jointly by the Joint Scientific Committee of WCRP and WCIP to encourage and facilitate the exchange of information between climate modellers and agricultural research specialists, and to guide the development of a preliminary co-operative programme of climate-crop research. Several specific activities for the committee were suggested for implementation in 1982, and a progress report will be made at the UNEP Study Conference on Methodology of Assessment of Impacts of Climate Change caused by CO₂, to be held in 1983.

49. An important part of WCIP is the task of stimulating, promoting and co-ordinating climate impact studies by both international and national organizations. UNEP is currently developing a register of climate impact studies, in order to identify areas where better co-ordination is required.

50. At a WCP co-ordination meeting of the executive heads of UNEP, ICSU and WMO (Dublin, 23 November 1981) it was agreed that, since agencies have less resources than when the WCP was originally conceived, a meeting of all organizations interested in WCP should be held at Rome in April 1982 to produce a plan to adjust planned activities to resources, and establish a strong relationship and feedback between the WCP components. The executive heads also agreed that UNEP should take the lead in assessing the CO₂ issue, with the assistance of WMO and ICSU.

24/ FP/1303-77-01.

25/ FP/1303-81-02.

4. Basic human needs

51. Three research institutions from developing countries have accepted the broad terms of reference proposed by UNEP to conduct case study investigations into interrelations of mass poverty and environmental quality with a view to deriving guidelines for environmental assessment and management of major national programmes of poverty alleviation. 26/

5. Biogeochemical cycling and bioproductivity

52. In mid-1981 the UNEP/SCOPE Nitrogen Unit 27/ published two books: Terrestrial Nitrogen Cycles, summarizing and assessing current knowledge of the biogeochemical nitrogen cycle, and Nitrogen Cycling in West African Ecosystems, the first of the planned summaries of regional analyses of nitrogen cycling in specific ecosystems. It reveals a lack of the understanding of the situation within the context of the prevailing major ecosystem types: savannahs, forests and agroecosystems.

53. The SCOPE/UNEP Carbon Unit 28/ at the Geology-Palaentology Institute of the University of Hamburg has continued its collection and analysis of data on the current knowledge on carbon transport in major world rivers. An International workshop is scheduled at the University (8-12 March 1982) to review the results and to outline an approach to tackling the outstanding problems.

54. An attempt to synthesize current knowledge of the interactions in the major biochemical cycles was made at a joint UNEP/SCOPE workshop (Stockholm 24-31 May 1981); the interim results were given wide publicity at the fifth International Symposium on Environmental Biogeochemistry (Stockholm, 1-5 June 1981), attended by 150 individual experts from 22 countries, active in environmental biogeochemistry. It is now clear that disturbances in one region of the world in the C, N, P and S cycles may affect the world as a whole, but quantitative models of the key cycles are still very crude.

55. The final course in the first cycle of specialist training courses in analytical techniques in bioproductivity and photosynthesis, 29/ for the Latin American Region, (Saltillo, Mexico, 6-26 September 1981) placed major emphasis on biofuels and energy balances. It was the first occasion to apply the UNEP-sponsored manual Techniques in Bioproductivity and Photosynthesis. 29/

26/ FP/1303-81-01.

27/ FP/1303-78-01.

28/ FP/1303-79-01.

29/ FP/1303-78-02.

E. ENVIRONMENTAL DATA
(budget line 1600)

56. Under the project with the United Nations Statistical Office (UNSO) 30/ the Survey of Environment Statistics: Framework Approaches Publications has been received by government and other experts, and by a number of regional workshops, and is scheduled for publication in February 1982.
57. A directory of national practices in the field of environment statistics has also been established in UNSO, under the same project, and is to be published in mid-1982.
58. Draft technical reports on selected areas of environmental concern (human settlements, energy, natural resources, land, pollution) were discussed at a series of regional workshops attended by producers and users of environmental data and will be used as the basis for the development of appropriate international recommendations.
59. A series of reports describing of non-governmental organizations (NGOs) and recent developments in selected fields (renewable energy, water, climate changes), published by the Environment Liaison Centre, Nairobi, 31/ have been widely disseminated among NGOs to increase their awareness of the problems.

30/ FP/1600-77-02.

31/ RA/1600-80-01.

II. SUBJECT AREAS

A. ENVIRONMENTAL ASPECTS OF HUMAN SETTLEMENTS PLANNING (budget sub-line 0104)

60. The fourth joint meeting of the Bureau of the Commission on Human Settlements and the Bureau of the Governing Council together with Executive Directors of UNCHS (Habitat) and UNEP took place in New York on 9 and 10 December 1981. The Executive Director's report on the work and outcome of the meeting is contained in document UNEP/GC.10/4/Add.2.
61. In response to paragraph 2 of Governing Council decision 9/14, UNEP approached several United Nations agencies inquiring possible forms of collaboration in the incorporation of environmental aspects into policies for local planning and management. Two responses were received, one from WHO enclosing Public Health Paper No. 74, entitled "Intersectoral co-ordination and health in environmental management", and the other from UNESCO stating that activities related to the decision are being carried out under MAB project 11. Also in implementation of this decision, a project entitled "Guidelines on environmental aspects of human settlements planning" ^{32/} was approved and the first phase completed, identifying eleven specific areas in which guidelines are to be prepared during the second phase.
62. During the United Nations Conference on New and Renewable Sources of Energy, UNEP and UNCHS organized a joint exhibition relating to environment and energy, particularly in human settlements development.
63. Support for the Capital Development Authority (CDA) of the United Republic of Tanzania, Dodoma, ^{33/} has continued during the period under review. A special report dealing with sewerage, sanitation and environmental study of the Capital City and surrounding area, prepared by a consultant, is likely to provide the basis for continued assistance to the Government of Tanzania. A special review mission from UNEP and UNCHS visited Dodoma between 22 and 28 November 1981. The mission examined the extent to which the project objectives have been fulfilled, the methods and procedures by which CDA promotes and protects the environment in and around Dodoma, and the likely future collaboration. It suggested that more rigorous selection of appropriate species of trees might result in bringing down the cost of afforestation, which has so far been very high, and noted that the recommendations of a UNEP-sponsored study on sewerage treatment at Dodoma will not only provide a more appropriate environmental solution to sanitation, but will also considerably lower the cost of treatment.

^{32/} FP/0104-81-02.

^{33/} FP/0104-78-03.

64. A book prepared under the ILO/UNEP project "The urban environment and urban employment in developing countries", 34/ entitled The urban informal sector: employment, poverty and environment published by ILO. In the WEP Studies series, deals with the implications of rapid urbanization for urban employment, poverty and the environment, and the important role played by the urban informal sector in alleviating these problems.

65. In December 1981, UNEP in conjunction with UNCHS published 35/ a handbook outlining technologies to be applied in up-grading squatter settlements in the Philippines, and suitable for application elsewhere in the ESCAP region.

66. Under the UNEP/UNESCO project "Integrated ecological studies on human settlements 36/ a report entitled "Energy for development: the energy policy papers of the Lae project (MAB Project II, Human Ecology Programme Report No. 4)" was published and distributed at the United Nations Conference on New and Renewable Sources of Energy (August 1981).

67. A joint UNEP/UNCHS/UNHCR mission to Somalia in March 1981 examined the refugee situation and, as a result, a demonstration project on the environmental improvement of refugee settlements has been prepared. A joint UNEP/UNCHS mission to Democratic Yemen in July/August 1981 paved the way for a project to demonstrate environmentally sound and appropriate solutions to human settlements. These projects are expected to be finalized shortly.

68. In collaboration with the University of Karlsruhe and the University of Mexico, several studies have been completed leading to a demonstration project on waste processing from the food industry. An innovative aspect of the project will be the use of the rotating disc method of extracting nutrients from corn waste.

69. A UNCHS (Habitat) ad hoc expert group meeting on appropriate infrastructure services, standards and technologies for upgrading slums and squatter areas and rural settlements (Nairobi, 2-9 November 1981) emphasized the importance of training and information exchange in this area, and recommended that this should be reflected in the work programmes of both UNCHS and UNEP. The report of the meeting 37/ identifies and assesses available technologies, source levels and standards that have been found to be effective in promoting the provision of adequate infrastructure.

34/ FP/C104-75-02.

35/ FP/0104-76-01.

36/ FP/0104-76-05.

37/ Report of the Ad hoc Expert Group Meeting on Appropriate Infrastructure Services, Standards and Technologies for Upgrading Slums and Squatter Areas and Rural Settlements (HS/C/5/INF.4).

70. A UNCHS (Habitat) ad hoc expert group meeting on development of the indigenous construction sector (Nairobi, 23-30 November 1981) concluded that the establishment and development of human settlements brings with it ecological, environmental and related impacts, and that the adverse effect of these impacts should be minimized by proper planning and management.

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

71. The fifth UNEP/ICIPE Group Training Course on Components Essential for Ecologically-sound Pest Management Systems 38/ (Nairobi, 19 July - 8 August 1981) was attended by 25 scientists (medical, agricultural and veterinary entomologists) from Africa, the Middle East, Asia and Latin America. This brings the total number of people so trained to 125.

72. The second UNEP/USSR International Training Course on Ecologically-safe Methods for Control of Malaria and its Vectors 39/ (Moscow, Krasnodar, Tbilisi and Baky (19 August - 30 September 1981) was attended by 25 malariologists from developing countries. The aims of this series of courses are to facilitate a better understanding of malaria control problems, to contribute towards improved planning and implementation of malaria control programmes and to assist in establishing or improving the methodology for the control of malaria vectors through ecologically-sound methods in developing countries. To date, 47 malariologists from 35 developing countries of Asia, Africa and Latin America have been trained.

73. The first session of the newly established FAO/UNEP/WHO Panel of Experts on Environmental Management for Vector Control, established under the Memorandum of Understanding among the three organizations to which UNEP became a signatory in 1980, was held at Geneva (22-29 September 1981). The Panel's principal objective is to institutionalize inter-agency and intersectoral collaboration in the field of protection of health and environment in water resources development projects. Among the major recommendations of the first session were the establishment of an international information centre for environmental management, the introduction of a quarterly news bulletin on environmental management for vector control, and the strengthening of the joint secretariat. The next Panel meeting will be held at Nairobi in 1982.

38/ FP/0108-76-02.

39/ FP/0108-79-04.

74. The second UNEP/USSR Training Course on Zoonosis Management 40/ (Moscow, Kiev and Dushanbe 3 September - 28 October 1981) was attended by 23 scientists from 19 developing countries of Africa, Asia and Latin America. The objective of the courses is to contribute towards a better understanding of the management and practical methods of diagnosis, treatment, prophylaxis and epidemiology of zoonotic diseases. Since 1980 45 scientists from 36 countries have been trained. An International Project Evaluation Meeting (Moscow, 28-31 October 1981), attended by representatives of UNEP, FAO, WHO and UNDP together with scientists from seven developed and developing countries, as well as members of the Project Scientific Council, recommended that the courses should be extended in duration and scope to cover Rift Valley Fever, Marburg disease and other diseases that may have emerged as a result of the disturbance of the human environment.
75. The International Programme on Chemical Safety, 41/ in which WHO, ILO, and UNEP jointly participate, now covers the activities leading to the preparation of criteria documents. 42/ Documents covering tin and organo-tin compounds (No. 15) and radio-frequencies and microwaves (No. 16) were issued during the period under review. Further documents dealing with arsenic, hydrogen sulfide, manganese, organic vegetable dusts and selected petroleum products are in the press, and 18 more are in an advanced stage of preparation.
76. A monograph on epidemiological methods to be used for environmental health studies was completed at a meeting of international experts held at Moscow in December 1981. 43/
77. UNEP, in collaboration with FAO, WHO and IARC, has completed the establishment of a laboratory in Swaziland to assess fungal contamination of food and its effects on human health. This will make possible the development of a food surveillance system to curb food contamination by mycotoxins.
78. At an international workshop held in the USSR in September 1981, 44/ participants from 19 developing countries in Asia, Africa and Latin America discussed the prevention of risks to health through continuing and systematic surveillance of drinking water quality. The results of this workshop have been transmitted to the Steering Committee for Co-operative Action in order to assist in the implementation of the International Drinking Water Supply and Sanitation Decade.

40/ FP/0108-79-05.

41/ Only the aspects of the programme in which UNEP is directly involved at Level Three are reported here. See also under IRPTC (paras. 28-40).

42/ FP/0107-75-10.

43/ FP/0107-81-01.

44/ FP/0107-80-03.

79. At a joint UNEP/WHO African Regional Workshop on Lay Reporting Systems on Health Information 45/ (Nairobi, September 1981), representatives of 11 African countries recommended the development of an international classification of environmental hazards to health in the region and the designation of collaborating countries for classification of diseases.

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

80. A progress report for this area is contained in document UNEP/GC.10/9 and Add.1.

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

81. Results of the UNEP/UNESCO-MAB pilot projects in tropical forest areas 46/ in Latin America, Africa and South East Asia were presented at the International Scientific Conference "Ecology in Practice" convened by UNESCO to commemorate the tenth anniversary of the Programme on Man and the Biosphere (Paris, 22-29 September 1981). A booklet, "Research notes for planners", evolved from the experience gained through the project, will be published in 1982. The Conference also gave special attention to the UNEP MAB international network of integrated pilot projects on ecological studies. It recommended, inter alia, more attention to the socio-cultural diversity and adaptability of the people of the tropics and fuller consideration of the linkages between terrestrial systems of the tropics and other systems, freshwater, coastal, marine, atmospheric and urban.

82. The Fifth International Post-Graduate Training Course on Ecosystems Management 47/ (October 1981 - July 1982) has been initiated at the Technical University of Dresden, in the Democratic Republic of Germany, with the participation of 15 representatives from developing countries from Africa, Asia and Latin America. The focus of the course is on tropical forest ecosystems.

83. The Spanish version of the UNEP/UNESCO "State-of-knowledge report on tropical forest ecosystems" 48/ has been published by UNESCO in co-operation with CIFCA.

84. Forest monitoring activities are described in the section on GEMS above.

45/ FP/0107-81-01.

46/ FP/1102-70-01.

47/ FP/1102-78-01.

48/ FP/0202-73-01.

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

85. Two volumes of the joint UNEP/UNESCO-MAB state of knowledge report on Andean ecosystems, "General prospectus on the Andean region and Central Andes" and "State of knowledge report on the mountain ecosystems of the Andes"^{49/} have been published as special issues of Mountain Research and Development in co-operation with the United Nations University and the International Mountain Society. The two other volumes of the series, on the northern and southern Andes respectively, will be published during 1982.

86. The final draft of the global status report of mangrove ecosystems ^{50/} was reviewed by the IUCN Commission on Ecology during the fifteenth General Assembly of IUCN (Christchurch, New Zealand, 11-20 October 1981), at which the first version of an audio-visual programme illustrating the significance and use of mangroves was also shown. Final versions of both are expected to be ready in the second quarter of 1982. Similarly, and as part of the same UNEP/IUCN project, the first draft of a paper on "Conservation of ecological processes" was reviewed.

87. At its seventh session (Paris, 22 September - 2 October 1981), the Intergovernmental Council of MAB concluded that mountain ecosystem management should be a priority subject area for the decade to come. To this end the International Centre for Integrated Mountain Development for the Hindu Kush-Himalaya region, located in Nepal and co-sponsored by UNESCO and the Governments of the Federal Republic of Germany, Nepal and Switzerland, was launched. The session also stressed the importance of developing environmental management tools to tackle the ecological problems of coastal zones in a new integrative way, while paying particular attention to the human impacts on these fragile areas resulting from processes such as urbanization, industry, agriculture and tourism. Similar recommendations were made by the UNU-sponsored Workshop on East African Coastal Resource Management (Mombasa, 25-30 October 1981).

F. SOILS
(budget sub-line 1106)

88. The second High-level Meeting of Experts on a World Soils Policy was held at Rome from 23 to 27 February 1981. In conformity with Governing Council decision 9/15 B, the recommendations of the meeting were transmitted to FAO, UNESCO, WHO, the international research centres of CGIAR, WFP, ISSS, IIASA, the Central Soil and Water Conservation Research Training Institute and SCOPE with a request that they appraise the objectives and proposed framework of a plan of action for the implementation of a world

^{49/} FP/1105-75-02.

^{50/} FP/1105-80-02.

soils policy. The replies received have been helpful in preparing the documents for the next meeting of soil experts (Geneva, 15-19 March 1982) at which the plan of action will be further elaborated. Work on the guidelines for the formulation of national soils policies has continued, comments on the first draft having been received from 12 international specialists and FAO. Further improvements in the document are now under way, and it is hoped to have the final draft in circulation in mid-1982. As a parallel but complementary exercise, the World Soil Charter prepared by FAO in response to resolution VI of the World Food Conference (Rome, 1974) was approved by the FAO Conference at its twenty-first session (November, 1981), and will be transmitted to Governments to help them develop a policy for wise land use, and as a basis for international co-operation towards the most rational use of the world's soil resources.

89. A joint UNEP/FAO/UNESCO/ISSS meeting was held at Sofia (16-22 June 1981) to define soil units and quantitative diagnostic criteria for soil separation for use in the proposed international referential base for soil classification and correlation. At the third ISSS Working Group on Environment, Productivity and Computerized Soil Data Handling (Paris, 13-17 September 1981), UNEP was asked to develop a computerized soil data system for various purposes, including land and soil monitoring within GEMS. Two consultants have completed a preliminary draft of such a system and it is planned to give it wide circulation for comments.

90. The UNEP/IFIAS project "Save our Soils" 51/ moved into the second phase, in which the methodology for identifying economic and social constraints against controlling soil degradation, developed in phase one, will be tested in two case studies in Nigeria and China, supplemented by smaller studies in 12 developing countries.

G. WATER

(budget sub-line 1107)

91. Two meetings of the ACC Inter-Secretariat Group on Water Resources were held (New York, 19-20 May, 1981; and Geneva, 19-23 October 1981). Important decisions were taken on arrangements for future reviews of the implementation by Governments of the Mar del Plata Action Plan, institutional arrangements for international co-operation, work programme for the Secretariat, plan of work in the field of water resources, evaluation by the Joint Inspection Unit of Water Resources Development of the United Nations System and the system-wide medium-term environment programme 1984-1989 in water resources development.

92. UNEP participated in the consultative meeting of the International Scientific Council on Lithosphere Problems (Paris, 1-3 June 1981). The implementation and workplan of the UNEP/UNESCO project "Protection of the lithosphere as a component of the environment" 52/ was reviewed. Two training seminars were held in the USSR on: "Protection of ground-water against Pollution and Depletion (August 31 - September 30 1981, 10 experts from developing countries, 10 foreign lecturers and 12 lecturers from leading USSR research organizations) and "Monitoring of Exogenous Geological Processes and Protection of the Lithosphere against Negative Impacts of Mudflows and Landslides" (12-17 October 1981, 27 participants). The outlines of two monographs, "Hydrogeological bases of ground-water protection" and "Landslides and mudflows, prediction and control for protection of the environment", were reviewed by the International Scientific Council during the Paris meeting and new versions, as recommended, were adopted during meetings of their Editorial Boards, held after the completion of the Seminars in the USSR.

93. As a member of the Steering Committee for Co-operative Action of the International Drinking Water Supply and Sanitation Decade, UNEP participated in the Eighth Session, (Paris, 15-16 September 1981), which established policies for the implementation of the Decade. At the national level, UNEP is part of the Technical Support Team for Kenya and, as such, participated in a WHO/SIDA workshop (Namanga, 29-31 July 1981) which formulated a background paper to guide the preparation of a National Decade Plan for Kenya.

94. The International Conference on Hydrology and the Scientific Bases for the Rational Management of Water Resources (UNESCO, WMO; Paris 18-27 August 1981) finalized a plan for the third phase of the International Hydrological Programme (IHP-III) 1984-1989. The plan was then approved by the Inter-governmental Council of IHP (Paris, 28-29 August 1981).

95. UNEP sponsored the participation of eight participants in the International Symposium on Water Resources Management in Industrial Areas (Lisbon, 7-11 September 1981), organized by the Portuguese Water Resources Association on behalf of the Portuguese Government and the International Water Resources Association, and co-sponsored by the United Nations Department of Technical Co-operation for Development and UNIDO, at which 500 participants from 60 countries and United Nations bodies discussed problems related to quantity and quality of water and waste-water in industrial areas. The information exchange covered technical, economic, legal and institutional aspects. It was realized that the needs of developing countries for assistance in these areas are expected to increase since the area of water for industrial use remains one in which there is ample room for significant increases, particularly on the technical and management aspects on the use and re-use of water managerial including thermal pollution.

96. UNEP has continued its support to the Training Centre on Water Resources Management (CEFIGRE) 53/ in France. During the reporting period, 50 participants attended two training courses, one in French (1-28 October 1981) and one in English (12 November - 10 December 1981). Additionally the programme was reviewed and an agreement reached between CEFIGRE and UNEP on the orientation of the next phase which aims at conducting seminars on: norms for waste and pollution control; drilling techniques and appropriate technology; training courses on rural water supply; water resources planning in arid zones and irrigation. Such seminars and training courses will be conducted in French, English and Arabic and will involve participants from developing countries of Africa and Asia, Latin America and West Asia.

97. UNEP participated in the Consultative Meeting of Donors for the Niger Basin Authority Secretariat (Geneva, 27-29 July 1981) to discuss the Two-Year Development Plan. Among the main recommendations, it was agreed that implementation of projects should be extended to cover the period 1981-1984 and to emphasize the formulation and identification of long-term, regional and national projects. NBA Secretariat and the US representatives expressed support for UNEP's catalytic and co-ordinating role in NBA and made an appeal for UNEP's participation in the environmental aspects of NBA.

98. The model for "Water Quality and Environmental Impact of the Upper Nile" 54/ has been completed, a manual has been produced on the operation of the model and a training seminar for 11 participants from countries involved in the project, was held from 16 November to 3 December 1981. The model will provide the required information to decision makers on policy measures for water management and could also be used to set-up similar programmes of data collection and analysis in many of the lakes of Equatorial Africa. The model will require further refinement as more data are collected and analysed.

H. GENETIC RESOURCES (budget sub-line 1108)

99. Technical backstopping of regional MIRCENS 55/ has been strengthened by the formal designation of supporting MIRCENS at Hawaii and Beltsville. The global registry of microbial genetic resources at the University of Queensland, Australia, now lists collections of germplasm in 84 countries. Training courses have been conducted in Argentina, Australia, Bangladesh, Brazil, Colombia, Czechoslovakia, Egypt, France, Hungary, India, Indonesia, Japan, Kenya, Kuwait, Mexico, Sudan, Thailand and United Kingdom of Great Britain and Northern Ireland. The report of the FAO/UNEP expert group meeting on biological nitrogen fixation 56/ has been published along with an action plan aimed at wider exploitation of the technology for soil fertility at the small farm level.

53/ FP/1107-77-01.

54/ FP/1107-77-06.

55/ FP/1108-75-03.

56/ FP/1108-75-07.

100. The report of the FAO/UNEP Expert Consultation on in situ Conservation of Forest Genetic Resources and two issues of the Forest Genetic Resources Newsletter have been published by FAO under the project "Conservation of Forest Genetic Resources. 57/ A data book on endangered forest tree species and provenances was published by FAO, listing data sheets on 22 reportedly endangered provenances and soliciting further information on their status. 58/ The fifth session of the FAO Panel of Experts on Forest Gene Resources (Rome, 8-11 December 1981) drew up a list of priorities for action in the field of forest genetic resources by region, species and operation.

101. The FAO/UNEP/IBPGR Technical Conference on Crop Genetic Resources 59/ (Rome, 6-10 April 1981) reviewed international progress in conservation of crop genetic resources, and charted the course of action for the next 10 years. The recommendations focus on conservation, characterization, evaluation, documentation and exchange of specified germplasm. The question of accessibility to conserved germ plasm as referred to in the Stockholm recommendation, was further examined in the context of documentation and exchange of germ plasm. The report of the Conference will be published in 1982, and its recommendations have been reflected in the system-wide medium-term environment programme.

102. Issues relating to accessibility to genetic resources were the subject of two important developments. The twenty-first FAO Conference resolved that the Director-General of FAO should examine and prepare elements of a draft international convention - including legal provisions - designed to ensure that genetic resources of agricultural interest will be conserved and used for the benefit of all human beings without restricted practices that limit their availability or exchange. It further requested FAO to provide a study on the establishment of an international bank of such resources, taking into account the provisions of the proposed international convention as well as ongoing national, regional and international efforts. Similarly, the fifteenth session of the IUCN General Assembly (Christchurch, New Zealand, 11-23 October 1981), while recommending that all genetic resources should in principle be available to potential users, and that States using such resources should contribute to their conservation, instructed the IUCN secretariat to undertake an analysis of the technical, legal, economic, and financial matters relating to the conservation, accessibility and use of these resources with a view to providing the basis for an international arrangement and for rules to implement it.

57/ FP/1108-75-05.

58/ FO: MISC/81/11, Rome, 1981.

59/ FP/1108-78-02.

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

103. In response to Governing Council decision 8/11, UNEP has been obtaining from, and disseminating to, Governments brief reports and information about activities of other organizations which contribute to the implementation of the World Conservation Strategy. Sources of information will be expanded to cover the Ecosystems Conservation Group (ECG) and technical committees of FAO, the MAB Council and IUCN, to which activities of several Governments during the last year were reported at the fifteenth IUCN General Assembly which adopted a resolution on the subject calling upon all United Nations, other non-governmental bodies and Governments to promote the implementation of the Strategy.

104. In implementation of General Assembly resolution 35/7 of 30 October 1980 on the draft World Charter for Nature, the Executive Director of UNEP, on behalf of the Secretary-General, convened a meeting (Nairobi, 24-27 August 1981) of an ad hoc Expert Group to analyse the 50 Government responses received on the draft Charter. 60/ The report of the Expert Group was transmitted to the Secretary-General on 16 September 1981, with a proposal that he recommend to the General Assembly that it give its favourable consideration to the revised draft. The General Assembly took note of the revised draft World Charter for Nature by resolution 36/6 of 27 October 1981, and requested the Secretary-General, in co-operation with UNEP and IUCN, to complete if necessary, on the basis of observations received from Member States, the revision of the draft world charter for Nature and to submit a supplementary report to the General Assembly at its thirty-seventh session.

105. The establishment of a full-time Conservation Monitoring Centre by IUCN, with the financial support of UNEP and WWF, 61/ marks the beginning of a whole new generation of the Red Data Books as well as a computer-held data base with much wider information available for use by Governments, organizations and institutions (see also under GEMS, para. 10).

106. The revised appendices of the Convention of International Trade in Endangered Species of Wild Fauna and Flora now include 477 mammals, 911 birds, 342 reptiles, 16 amphibians, 24 fish, 45 molluscs, 38 insects and several hundreds plant species. During the reporting period, the Convention secretariat brought more than 120 cases of suspected violation of the Convention to the attention of the authorities in the countries concerned.

107. An Ecosystem Conservation Group/WHO Policy Statement on the Use of Non-human Primates for Biomedical Purposes, 62/ published by WHO, constitutes a good demonstration of the principles of sustainable utilization of important but vulnerable natural resources. The statement reaffirms that non-human primates play an important role in biomedical research and testing and stipulates that animals obtained in contravention of the Engangered Species Convention should not be used, as this threatens their continued survival.

60/ FP/1110-80-03.

61/ FP/1110-80-01 and FP/1110-80-02.

62/ FP/1110-80-02.

108. Under two joint UNEP/IUCN projects 63/ a revised classification of the biogeographical provinces of the world, including a province-by-province presentation on a world map at a scale of approximately 1:25,000,000, was prepared. For national parks and protected areas of the neotropical realm, 350 revised Inventory sheets were prepared and included in the World Directory. A draft document on protected areas of the Australian realm covering 354 revised inventory sheets was prepared in October 1981. The 1981 updating of the United Nations List of National Parks and Equivalent Reserves, a comprehensive world-wide list of all parks and protected areas of over 1,000 hectares, was issued in October 1981. PARKS Magazine, an International Journal for managers of national parks and other protected areas, continued to be published: Vol. 6, Nos. 1 and 2 were issued.

109. As of 31 October 1981, 209 biosphere reserves in 55 countries had been designated. The biosphere reserves are located in 90 out of a total of 192 biogeographical provinces, and cover an estimated area of about 115 million hectares. Also as of that date, 612 national research projects in biosphere reserves had been registered at the UNESCO (MAB) Secretariat. A UNEP/UNESCO project 64/ on the establishment of model biosphere reserves was recently launched to develop practical resource conservation programmes for sustained development in developing countries.

110. UNEP has supported two Governments in living resources conservation for sustained development: Burundi was assisted in the preparation of the programme for the Institut national pour la conservation de la nature and Fiji in the preparation of a framework for a national conservation strategy. 65/ Two issues of TIGER PAPER 66/ have been published.

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

111. UNEP contributed to the preparation of the Secretary-General's report to the United Nations Conference on the Least Developed Countries (Paris, 1-14 September 1981), which had before it as a background document (A/CONF.104/7/Add.24 and Corr.1) a UNEP paper on environmental constraints and prospects of the least developed countries. The Substantial New Programme of Action for the 1980s adopted by the Conference reflects environmental considerations adequately at the level both of analysis of prospects of accelerated and self-sustained development, and of needed action concerning forestry, livestock, natural resources and energy, rural development, human settlements, health and sanitation, and disaster assistance in the least developed countries.

63/ FP/1110-80-03 and FP/0502-80-01.

64/ FP/1110-81-05.

65/ FP/1110-80-04.

66/ FP/1104-75-02.

112. The Governing Council, in decision 9/1, section I, inter alia, called upon the Executive Director to continue to give operational content to the relevant provisions contained in the International Development Strategy and to assist in preparations for the global round as appropriate. In preparation for the Cancun meeting on international co-operation and development, the Executive Director provided the Secretary-General with a briefing on environmental aspects of international co-operation for development, within the terms of reference of the meeting, focusing mainly on issues of environment in relation to food security and agriculture, rural development, trade and industrialization, energy, development aid and technical co-operation. By decision 9/16, the Council inter alia requested the Executive Director to approach other international and intergovernmental agencies with a view to securing their support on a co-operating agency basis for the implementation of the findings of the projects on environment and development. The findings of the final report of the Government of Kenya/UNEP/UNDP project on environment and development 67/ are being analysed to determine: (a) what lessons can be drawn in terms of effective incorporation of environmental considerations in development planning; and (b) whether the investigations and evaluation procedures employed in the project could be replicated in other developing countries. The continuing mechanism for implementation of pertinent findings of projects on environment and development by multilateral development assistance organizations is the Committee of International Development Institutions on the Environment. UNEP is also working towards catalysing a declaration of environmental principles in development co-operation by bilateral development assistance bodies.

113. Background papers and the final reports of the UNEP/ECLA 68/ and UNEP/ECWA Regional Seminars 69/ on Alternative Patterns of Development and Life-styles and the keynote and overview papers for the UNEP/ECA 70/ and UNEP/ESCAP regional seminars 71/ have been published. Synthesized conclusions of the five regional seminars have been published by UNEP in its Executive Series under the title "Choosing the options." As a follow-up to the UNEP/ECLA Seminar ECLA has launched a programme to promote "horizontal co-operation" among developing countries in Latin America in respect of styles of development and environment. 72/ Under this activity, three regional seminars have been held, on environmental management of large dams, expansion of the agricultural frontier and the environment; and the process of metropolitanization and the environment. They identified the shared problems of countries in the region, facilitated exchange of experience in dealing with them and outlined the scope for regional co-operation in these areas.

67/ FP/0404-78-09.

68/ FP/0404-74-04.

69/ FP/0404-79-01; Environment and Development in Africa, UNEP studies No. 1, 2.

70/ FP/0404-78-05.

71/ FP/0404-78-04; Alternatives - A Journal of World Policy, Vol. V, No. 4, 1980 and the overview of environment and development: Asia and the Pacific.

72/ FP/0404-80-02.

114. As a follow-up to Governing Council decision 9/11 which, inter alia, emphasized the importance of redoubled and concrete efforts of the United Nations system in the area of sound integration of environmental dimensions in the programming of technical assistance at the country level, UNEP intensified its consultations with other United Nations organizations on the integration of environmental dimensions into the mainstream of international technical and economic co-operation. A discussion paper on the integration of environmental dimensions in the programming of technical assistance at the country level is to be sent to Governments for comment in 1982. The paper identifies four main avenues of effective implementation of the Governing Council directives on environmental programming of technical assistance: assistance in the design and analysis of development projects and programmes with substantial environmental impact; assistance in the formulation and monitoring of long-term or other periodic development plans; assistance in meeting major national environmental concerns, including those requiring regional or sub-regional co-operation; and assistance in the development of national environmental policies, machineries and legislation.

115. By way of implementation of Governing Council Decision 8/12 in which, inter alia, the Council called on the Executive Director to prepare a programme for the participation of UNEP in international efforts to devise ways and means for the implementation of the International Development Strategy for the Third United Nations Development Decade, an effort has been made to reflect the pertinent goals and policy measures of the Strategy adequately in the system-wide medium-term environment programme.

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

116. Under the joint UNEP/ECE 73/ activity, a compendium on low- and non-waste technology was produced by ECE in mid-1981. It covers the following areas: manufacture of food, beverages and tobacco, textiles, and leather industries, wood and wood products including furniture, paper and paper products, chemicals, petroleum, coal, rubber, and plastic, non-metallic mineral products, basic metal industries and recovery of material from urban and solid wastes. The compendium was widely distributed particularly to industrial and agricultural sectors.

117. "Biogas Fertilizer System" (UNEP Reports and Proceedings Series, 2), a technical report or a training seminar in China, 74/ offers a good example of technology transfer among developing countries: models similar to the one described in the report are currently being constructed in Bangladesh, Cyprus, Ecuador, Egypt, Fiji, Guatemala, Guyana, India, Peru, Seychelles and Sri Lanka.

73/ FP/0402-78-02.

74/ FP/0402-79-02.

118. Under the activities relating to the management of water weeds, 75/ two small-scale plants utilizing water hyacinth for the manufacturing of paper were built at Hyderabad, India. Other uses for water hyacinth successfully tested were: stock feed, roofing boards, and water purifier in sugar refineries.

119. Under the joint UNEP/ILO activity 76/ on appropriate technology for small scale food production, the first manual, on fish processing has been published; the manual on beef and pork processing has been completed, and will be published during 1982.

120. Under the UNEP/UNEP/COM project, 77/ a report on the state of the art of on "Microbiological leaching of metals from ores" has been completed and will be published in the second half of 1982.

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

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

(a) Draft guidelines on management of agro-industrial residues utilization;

(b) Draft guidelines on risk management and accident prevention in the chemical industry;

(c) Draft guidelines on application of oil spill chemical application and environmental effects, in co-operation with IMCO;

(d) An overview on the environmental aspects of the sugar industry;

(e) A report on the UNEP/UNIDO Workshop on the Environmental Aspects of Alumina Production, 78/ The report identifies environment-related issues requiring further evaluation and recommends the development and application of cost-effective bauxite residue utilization where feasible;

(f) A report on the WHO/UNEP Asia and Pacific Regional workshop on Industrial Environmental Impact Assessment and Siting of Industry; 79/ the report emphasizes the need for a flexible approach, minimum bureaucracy, avoidance of arbitrariness, and integration of physical and socio-economic factors. The UNEP guidelines on this subject provide a procedural and methodological framework for carrying out industrial environmental impact assessment;

75/ FP/0402-79-01.

76/ FP/0402-80-02.

77/ FP/0402-81-01.

78/ Document UNEP/WS/AI.7 (Final).

79/ UNEP (IEO)/WHO(PEPAS), May 1981.

(g) A report of the workshop on the Environmental Aspects of Non-Ferrous Metals Industries. The report identifies environmental issues related to mining, production, processing and use of cadmium, copper, lead, nickel and zinc; 80/

(h) In co-operation with WHO guidelines on disposal and transfrontier transport of hazardous chemicals and wastes. 81/

122. The Second Meeting of the UNEP Environmental Consultative Committee on the Petroleum Industry (Paris, 2-4 June 1981) 82/ reviewed draft IMCO/UNEP guidelines on oil spill chemical dispersant application and environmental aspects. As a result of this review, overview booklets on disposal of drilling muds and disposal of oily wastes resulting from major oil spills are being prepared in co-operation with IPIECA. Also reviewed were the state of the art of action to control sulphur emissions from the petroleum industry, which are a factor in the creation of acid rain, the environmental and resource conservation aspects of flared gas; environmental management in refineries, terminals and coastal installations and environmental aspects of pipeline construction and operation.

123. A UNEP/WHO Inter-regional Workshop on Air Pollution from Motor Vehicles (Moscow, 5-9 October 1981) examined the applicability of the UNEP Environmental Guidelines for the Motor Vehicle and its use, particularly to countries in Africa, West Asia and Southern Europe, and confirmed the priorities for action given in the guidelines. An annex to the guidelines, indicating the preparatory and review processes, is being prepared prior to their wider circulation.

124. The remaining sections of the manual on environmental management in the pulp and paper industry have been completed and published: Emission of air and water pollutants; raw materials preparation; in-plant measures for sulphite pulping and recovery; mechanical and chemimechanical pulping and bleaching; de-inking and other secondary fibre systems; paper making; primary and secondary effluent treatment methods; treatment of bleach plant effluents; alternative utilization of spent liquors; and effluent disposal by irrigation. This manual is used as the basis for preparing training courses with the support of Swedish International Development Authority (SIDA) and a series of regional training workshops on environmental management in the pulp and paper industry. The British Broadcasting Corporation open university production centre collaborated with UNEP to prepare a set of audio-visual material for the training workshops. Approximately 350 senior government and industrial personnel from about 70 countries will benefit from the comprehensive technical information available through the workshops, and the distribution of the manual will permit the integration of environmental considerations into the planning, designing, construction and operation of pulp and paper mills.

80/ Document UNEP/WS/NFM.9 (Final).

81/ See also under IRPTC, para. 40.

82/ For the report of the meeting, see document UNEP/IEO/CC/PET.2/4.

125. The Proceedings of the UNEP Workshop on the Environmental Aspects of the Iron and Steel Industry (Geneva, 17-20 October 1978), which incorporate a report by the Secretariat on the state of the art, were published. 83/

126. UNEP co-sponsored with United Nations, UNIDO and IISA an International Symposium on Water Resource Management in Industrial Areas (Lisbon, 7-11 September 1981) and presented strategies for action based on pollution prevention, residues recovery and re-use, improvement of operation of treatment facilities and information exchange.

127. The global mailing list for the quarterly Industry and Environment Newsletter now exceeds 5,000. Three regular issues were published, on: motor vehicles; bauxite, alumina and the environment; and hazardous chemicals.

128. On the occasion of the eighth General Assembly of the World Federation of Engineering Organizations (Buenos Aires, 13-20 November 1981), UNEP presented a paper on low pollution industrial technologies at the first World Congress on Engineering and the Environment. A paper on environmental engineering for small-scale industries prepared by INFOTERRA, IRPTC and the UNEP Industry and Environment Office was presented to the Seminar on Small- and Medium-sized Enterprises, during the Congress. The WFEO General Assembly approved the report and work plans of the new Committee on Engineering and the Environment, and of the Committee on Engineering Information and Documentation, including a planned conference on environmental information for engineers, designed in close co-operation with UNEP.

129. The specialized and computerized industry and environment data base now has over 2,000 bibliographic entries, as well as expanded topic files, to which has been added the ECE Compendium on Low- and Non-Waste Technologies. Response to 58 official queries on subjects relating to industry and environment have been made, including provision of field assistance in one case.

130. Assistance was provided to several Governments in using the UNEP guidelines for assessing industrial environmental impact and environmental criteria for the siting of industry.

131. Co-operation has continued with international industrial organizations, such as the International Chamber of Commerce, and with sectoral industrial associations, in promoting an environmental dimension in their activities.

83/ UNEP Industry and Environment Workshop Proceedings Series, Vol. I, parts 1 and 2.

M. MARINE POLLUTION
(budget sub-line 0501)

132. The following GESAMP studies have been completed and are currently being printed:

(a) Review of the health of the oceans, 84/ Report Study GESAMP (15), UNESCO. This represents the first integrated global assessment of pollution in the marine environment, using the interfacial flux model for various pollutants entering the sea and the evaluation of the relative seriousness of the effects of selected pollutants and toxicants for the marine environment. The report stresses the necessity to control pollution in coastal waters, closed and semi-enclosed seas as the parts of the oceans already threatened by man's activities. The open oceans ecosystems, however, have not been significantly affected by the concentration of some of the contaminants measured and appear to be in "good health";

(b) Evaluation of hazards of harmful substances carried by ships, 85/ Report Study GESAMP (17), IMCO. This report revises the ratings connected with potential bio-accumulation of harmful substances; adds carcinogenic properties of substances as an additional criterion for environmental assessment; and focuses on the possible impact of harmful substances carried by ships on living resources, human health, recreation and other uses of the sea;

(c) Seas disposal studies, 85/ Report Study GESAMP (16), IMCO. This report deals with the choice of site for sea disposal according to the nature of the waste and the subsequent capacity of the marine ecosystem to handle the intrusion.

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

133. At its fourteenth session (Rome, 26-30 May 1981), the FAO Committee on Fisheries took note of information presented by the FAO secretariat concerning the UNEP-FAO draft global plan of action on marine mammals 86/ and requested the FAO secretariat to undertake any necessary consultation with UNEP and other relevant organizations for the further elaboration and implementation of the plan. These consultations are continuing, and include the elaboration by FAO and UNEP of the concrete steps to be taken in the further development of this activity, including such questions as the establishment jointly by UNEP and FAO of an ad hoc advisory committee of scientists and an ad hoc planning and co-ordinating committee to assist in the further development of the plan.

84/ FP/0501-77-02.

85/ FP/0501-80-02.

86/ FP/0502-78-02.

134. The International Whaling Commission (IWC) held its thirty-third annual meeting (Brighton, United Kingdom, 20-25 July 1981). Again, proposals for a moratorium on commercial whaling and for a world-wide ban failed to attract the necessary three-quarters majority support. Other proposals for stricter conservation also failed. Zero catch limits were set however for sperm whales in all areas except the Northwestern Pacific. The Commission also decided to ban as from 1983 the use of the non-explosive grenade to catch minke whales, on the grounds that it is inhumane. Because of the uncertainty in the scientific advice - which characterized much of the meeting - the catch limit was established between that of last year and the number favoured by the majority. Catch limits for other species and stocks were changed from the previous year, though not in accordance with clear scientific advice. A revision of the Commission's new management procedure, prepared during the past two years by its Scientific and Technical Committees, was not adopted. Little progress has been made in improving or implementing the Commission's International observer scheme, so that many commercial whaling operations are still not monitored to the satisfaction of the membership. The continued uncertainty over the moratorium led to the fifteenth session of the IUCN General Assembly urging all nations to work to ban all whaling outside the International Convention for the Regulation of Whaling. Nine countries joined the Commission between August 1980 and the end of November 1981.

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

1. The Mediterranean

Action plan adopted in 1975

135. At its first meeting (Athens, 28 September - 2 October 1981), the Working Group for Scientific and Technical Co-operation, a standing group composed of MEDPOL National Co-ordinators, approved the basic criteria proposed by the MAP Co-ordinating Unit for the implementation of the national monitoring programmes and the development of research activities. As a follow-up, the MAP Co-ordinating Unit requested the national co-ordinators for MEDPOL to prepare detailed National Monitoring Programmes as part of the MEDPOL phase II programme, and circulated to the National Co-ordinators and the scientists that collaborated in the pilot phase of MEDPOL a request for research proposals following the lines established by the Second Meeting of the Contracting Parties (Cannes, 2-7 March 1981).

136. The final draft of the Agreement between the Hellenic Republic and the United Nations regarding the Headquarters of the Co-ordinating Unit for the MAP at Athens was submitted to the Government of Greece on 24 September 1981. However, as at 31 December 1981 the Government had not signed the agreement.

137. The Bureau of the Contracting Parties met twice (Athens, 23 September 1981 and Geneva, 17-18 December 1981) and noted that the critical delays in Governments' contributions were seriously affecting the work of the MAP. However, there was no unanimity between the contracting parties to approve a \$1,000,000 loan against future contributions. The Bureau also invited all MAP countries to nominate national MEDPOL co-ordinators and to sign and ratify the Protocol on Land-based Sources of Pollution.

138. The Drafting Committee on the Protocol on Specially Protected Areas (Geneva, 15-16 December 1981) finalized the draft proposal for the Mediterranean specially protected areas and ensured conformity of the four official languages. The text will then be submitted to an Extraordinary meeting of the contracting parties 29 March - 1 April for agreement and thereafter to a diplomatic conference 2-3 April 1982 for adoption and signature.

2. The Kuwait Action Plan

Action plan adopted in 1978

139. A Government Experts Meeting on Environmental Public Awareness 87/ (Muscat, 15-17 December 1981) approved the objectives, workplan and time-table for the 1982-1983 programme which will be co-ordinated by the Environmental Awareness Programme Group, in which national focal points are represented, and implemented by the ROPME Secretariat. The meeting also took note of the decision of the ROPME Council to allocate \$250,000 towards the programme for the biennium and recommended the creation of a Department of Public Environmental Awareness within the Secretariat.

3. The Caribbean

Action plan adopted in 1981

140. A meeting of legal experts 88/ from 24 Governments in the region (New York, 7-11 December 1981) reviewed and revised 14 substantive articles of the draft convention for the protection and development of the marine and coastal environment of the wider Caribbean region, and recommended another meeting in 1982 to complete its work.

141. The Monitoring Committee (New York, 14-16 December 1981) reviewed the progress report on the implementation of the Caribbean Action Plan, adopted the terms of reference for the management of the Caribbean Trust Fund, expressed satisfaction with the present interim co-ordinating arrangements pending the establishment of the co-ordinating unit in Jamaica, established

87/ FP/0503-77-08.

88/ FF/0503-77-03.

the terms of reference for the monitoring committee, agreed to continue developing the regional legal agreements through a further meeting of legal experts in 1982, and adopted a total budget of \$806,133 for the implementation of the action plan during 1982.

4. The West and Central African region

Action plan adopted in 1981

142. The following materials have been prepared: a directory of African marine research centres; a report on rivers inputs into the West and Central African marine environment; 89/ a survey of marine pollutants from industrial sources in the West and Central African region 90/ a report on the status of oil pollution and its control in the West and Central African region. 91/

143. A meeting of the Steering Committee for the Marine Environment of West and Central Africa (Abidjan, 20-22 July 1981) defined a priority work programme for 1982-1983, recommended initiatives to speed up ratification of and adherence to the regional convention and protocol, and adopted terms of reference for the management of the trust fund for the region which was then formally established in November 1981. Twelve Governments have so far ratified the regional convention.

5. The East Asian Seas

Action plan adopted in 1981

144. The Second Intergovernmental Meeting on the East Asian Seas Action Plan 92/ (Bangkok, 9-11 December 1981) established a trust fund covering the 1982-1983 biennium for implementing the East Asian Seas programme and identified five priorities projects to be initiated during 1982-1983, as well as the institutional arrangements for their implementation.

6. The South-West Pacific

Action plan to be formulated

145. The fifth meeting of the co-ordinating group for the South West Pacific Regional Environment Programme 93/ took place at SPEC headquarters, Suva, Fiji, on November 19-20, 1981. All four co-operating organizations (SPEC, SPC, UNEP, and ESCAP) were represented. After analysing the progress made in the implementation of the programme for the South-West Pacific, the meeting made a number of suggestions regarding the conference on the human environment in the South-West Pacific region, which is expected to adopt the action plan in March 1982.

89/ FP/0503-79-20.

90/ FP/0503-79-18.

91/ FP/0503-79-17.

92/ FP/0503-80-05.

93/ FP/0503-79-15.

7. The South-East Pacific

Action plan adopted in November 1981

146. Following an expert meeting 94/ (Lima, 21 September 1981) which revised the Draft Action Plan for the Protection of the Marine Environment and Coastal Zones of the South East Pacific, a Conference of Plenipotentiaries (Colombia, Chile, Ecuador, Panama and Peru), convened jointly by UNEP and the Permanent Commission for the South Pacific (CPPS), adopted the Action Plan for the South-East Pacific Region (Lima, 9-12 November 1981). The plan will become operative in 90 days providing no objections are raised by any of the Governments concerned. Three annexes were appended to the adopted plan: a convention to protect the marine environment of the South East Pacific; and agreement to co-operate on a regional basis in combating oil pollution; and a set of Institutional and financial arrangements to implement the Action Plan, including, the establishment of a co-ordination unit within the CPPS structure, and a trust fund for the region to which the signatories committed themselves to a target of \$310,000 for the biennium 1983-1984, subject to UNEP's contribution.

8. The East African and South-West Atlantic regions

Action plans to be formulated

147. In preparation for the formulation of an action plan for the East African Region, a joint UNEP/UN/UNIDO/FAO/UNESCO/WHO/IMCO/IUCN mission visited the eight States of the region in October and November 1981. The mission members prepared sectoral reports on conservation, environmental health, marine and coastal area development, marine pollutants from industrial sources, marine pollution and oil pollution control. On the basis of the sectoral reports, UNEP will prepare an overview report on the marine and coastal resources and related environmental problems of the region. The reports will be used as the working documents for a workshop on the marine and coastal environmental problems of the East African region in January 1982.

148. Governments in the South-West Atlantic region have expressed the wish to hold informal consultations between themselves prior to an exploratory mission by UNEP. Accordingly, UNEP is awaiting the results of these consultations.

P. ENERGY
(budget line 0700)

149. The reports on the environmental impacts of production and use of fossil fuels, nuclear energy and renewable sources of energy have been published in a book entitled "The Environmental Impacts of Production and Use of Energy" by Tycooly International, Dublin. The proceedings

of the UNEP/Beijer Institute/USSR International Workshop on the environmental implications of expanded coal utilization 95/ (Moscow, October 1980) have been finalized and are being printed as a book by Pergamon Press, Oxford.

150. The report on the comparative assessment of the environmental impacts of different sources of energy 96/ is being finalized and should be published in the first half of 1982.

151. Several studies were prepared for the United Nations Conference on New and Renewable Sources of Energy (Nairobi, 10-21 August 1981):

- (a) Renewable Sources of Energy: The Environmental Dimension;
- (b) Energy for Rural Development: A Time to Act;
- (c) Special Issue of Mazingira on Energy, Environment and Development.

In addition, UNEP supported the distribution of a publication prepared by Sierra Club International Earthcare Center, "Global Energy in Transition" and a book on renewable sources of energy and the environment published by Tycooly International, Dublin, and organized panel discussions on environmental aspects of renewable energy sources.

152. In co-operation with ESCAP and FAO, an Expert Group Meeting was convened (Bangkok, 5-11 May 1981) to discuss the problems pertaining to fuelwood and charcoal in the ESCAP Region. 97/ The report of the meeting, which was circulated at the Energy Conference and at the eighth session of the Committee on Natural Resources (Bangkok, 27 October - 2 November 1981), emphasized the need for detailed environmental impact assessment and management of forest resources and outlined a number of priority areas for action.

153. UNEP supported the UNITAR International Conference on Small Energy Sources convened in Los Angeles from 9-10 September 1981.

Q. NATURAL DISASTERS
(budget line 1200)

154. As a follow-up to the UNEP Expert Group Meeting on man's activities on the mitigation of the risks of natural disasters, UNEP has developed broad guidelines for use by policy-makers and regional planners for the prevention and mitigation of the risks of natural disasters. These will be published in 1982.

95/ FP/0700-79-03.

96/ FP/0700-79-01.

97/ FP/0700-78-03.

155. In co-operation with WMO, UNEP has provided financial support for manning of the International Experiment Centre in Tokyo for the development of better early warning systems for typhoons. The project 98/ was an essential part of the large scale Typhoon Operational Experiment (TOPEX).

156. UNDR0 has published volume 6 of a compendium of current knowledge on "Disaster Prevention and Mitigation", 99/ "Aspects related to construction and civil engineering".

98/ FP/1200-81-02.

99/ FP/1200-76-02.

III. SUPPORTING MEASURES

A. ENVIRONMENTAL EDUCATION
(budget sub-line 0305)

157. Under the International Programme in Environmental Education 100/ the following materials were published: teachers' guide on environmental education, glossary of environmental education terms, sourcebook for formal environmental education, directory of institutions active in the field of environmental education, annotated environmental education bibliography, five teacher training modules, three modules for primary and secondary education on principal problems of the environment (urban environmental problems, conservation and use of natural resources and desertification), guide on the use of modular approaches for environmental education, guide on the use of gaming and simulation in environmental education. The quarterly newsletter CONNECT continues to be published in five languages (Arabic, English, French, Russian, Spanish). Under the same project international workshops for educational key personnel were held in China, Egypt, Guyana, Hungary, Ivory Coast, Jamaica, Lebanon, Malta, Nepal, Rwanda, Sierra Leone, Ukrainian SSR and Zaire.

158. Two conferences on environmental education were held in the ESCAP region, and research projects were undertaken in Australia, Bulgaria, Cameroon, Chile, Costa Rica, Cuba, Czechoslovakia, Germany, Federal Republic of, India, Kuwait, Poland, Union of Soviet Socialist Republics, and Upper Volta.

B. ENVIRONMENTAL TRAINING
(budget sub-line 0306)

159. At the first ordinary meeting of the CIFCA Executive Board (Caracas, 7-9 July 1981), the representatives of the Governments of Panama, Peru, Spain and Venezuela and UNEP approved a programme of work up to February 1982 and urged stronger development of the research programmes of the institutions affiliated to the Centre. Minutes of this first meeting were circulated to the institutions in the form of a newsletter Informative Synthesis. In the six years of CIFCA's existence 101/ 85 courses have been held, 45 in Latin America and 40 in Spain, with a total of some 2,400 participants. During the same period the following were published: 25 books on issues ranging from environment and development to water waste treatment; 4 bibliographies; 8 documents dealing with training on environmental issues; weekly bulletins on environmental issues transmitted to all Latin American Governments.

100/ FP/0305-79-01.

101/ FP/0301-75-08.

C. INFORMATION

(budget sub-line 0303)

160. The regional information support programme 102/ focused on the implementation of a global public information campaign to develop general awareness of the purpose and significance of the UNEP Governing Council session of a special character, ten years after Stockholm, by stimulating the planning of independent information programmes among Governments, United Nations and inter-governmental bodies and NGOs. Some Governments have formed interministerial "Environment '82" committees to co-ordinate their national programmes.

161. The UNEP regional offices played a major role in activities for World Environment Day 1981, arranging and supervising the production of the state of the environment media pack in English, French, Russian, Spanish, German, Italian, Greek, Serbo-Croat, Turkish and several Asian languages. Six thousand packs and additional specially targeted features were distributed, and extracts or adaptations were published by most of the leading media in each region.

162. UNEP provided support 103/ for the development of information activities by NGOs in 1982, co-ordinated by the Environment Liaison Centre, Nairobi. In particular, financial assistance was provided to enable NGO representatives from developing countries to participate in a first preparatory conference (Brussels, 21-22 November 1981) for a major NGO forum in Nairobi at the time of the session of a special character.

163. Under the direction of its Editorial Board, the printing and distribution of the English edition of Mazingira magazine is now assigned to a commercial publisher, Tycooly International Ltd. ENDA will continue to publish the French edition, and a publisher is being sought for the Spanish edition.

164. Under the UNEP publication programme 104/ the following publications are being prepared to mark the occasion of the session of a special character: the popular version of the state of the environment report,

102/ FP/0303-77-03.

103/ FP/0303-80-02.

104/ FP/0303-76-01 - Many publications have already been referred to in chapters I and II. Others are: UNITERRA; Desertification Bulletin; Siren (the newsletter of the Regional Seas PAC); the Ozone Layer Bulletin; Executive Series: "In Deference of the Earth"; Reports and Proceedings Series: "Ecology and Utilization of African Inland Waters"; Industry and Environment Guidelines Series I: "Guidelines for Assessing Industrial Environmental Impact and Environmental Criteria for the Siting of Industry"; Industry and Environment Workshop Proceedings Series I: "Environmental Aspects of the Iron and Steel Industry Workshop Proceedings". The last two have been published under project FP/0303-8-01 by the Publication and Information Support Programme in the USSR.

ten years after Stockholm: a book of contributions from selected Heads of State demonstrating commitment to the environment in developing countries; and a book assessing the activities of the environment programme over the last ten years.

165. The following UNEP co-productions 105/ with established film-makers were released: "Water More Precious Than Oil", with the Public Broadcasting System (PBS) of North America; "The Fragile Mountain", again with PBS, produced as a "special" for the NOVA series and inspired by the UNEP film "Firewood, The Other Energy Crisis"; "On the edge of Paradise", with the BBC, a film on the Caribbean environment; "Refugee" with the United Nations Division of Public Information, a film on the refugee problems in Africa; "Okay Here - Forbidden Anywhere Else", with an independent producer, based on the book "Circle of Poison" on toxic chemicals.

D. TECHNICAL ASSISTANCE
(budget sub-line 0302)

166. 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, and support to the Environmental Co-ordination Units in each of the United Nations regional commissions.

167. The regional offices 106/ have:

(a) In the Asia and Pacific region, provided assistance in the formulation of a Regional Environment Programme which was adopted on 30 April 1981 107/ by a Conference of Ministers of the Environment of the five ASEAN countries; provided consultancies to Afghanistan, Burma, Indonesia, Malaysia, Philippines and the Republic of Korea; provided technical support to APDC, as well as to ESCAP, ILO, UNESCO and WHO/PEPAS in the formulation of regional projects; and provided financial support to seminars in the Republic of Korea and Thailand, as well as to a pilot project in Thailand on the recovery of residues from electroplating industry;

(b) In the African region, provided six consultancies to the Governments of Ghana, Lesotho, Malawi, Somalia, Swaziland and Zambia to advise on specific subjects including environmental aspects of human settlements, soil erosion, water supply, the establishment of environmental institutions and organising courses for environmental education and training; sponsored 15 experts from 14 different countries in the region to attend various international meetings, seminars, workshops and training courses dealing with environmental matters;

105/ FP/0303-77-01.

106/ FP/0303-75-51, 52, 53, 54.

107/ Not previously reported.

(c) In the West Asian region, provided advisory services on appropriate technologies, integration of environmental concerns into development planning, drafting regional projects for the assessment and abatement of industrial pollution; and on the identification of environmental problems in the region;

(d) In the Latin American region, provided 31 consultancies for the Governments of Argentina, Brazil, Chile, Colombia, Cuba, Mexico, Nicaragua, Peru, Uruguay and Venezuela, as well as for Caribbean sub-regional and Latin American regional activities; provided 41 fellowships for participants in workshops, seminars and conferences dealing with environmental issues; signed a memorandum of understanding establishing mechanisms of mutual co-operation with PAHO; provided technical and financial assistance to 5 regional projects, including the Venezuela-UNDP project "Environmental Macro-Systems for Development Planning"; convened five meetings, including the expert meeting (Barbados, 2-4 December 1981) on environmental priorities for the Caribbean island countries and a senior consultants group in preparation for the inter-governmental meeting to be held at Mexico City (8-12 March 1982) to discuss the regional priorities for the next decade; prepared the Latin American portion of the "Environmental Mechanisms and Legislation - a Comparative Study".

168. The Environmental Co-ordination Units ^{108/} continued their activities within their respective regions, including: formulation of proposals aiming at incorporating environmental concerns in the regional commissions' activities; supervision of implementation of Fund-supported projects with the regional commissions; publication of various documents, e.g. proceedings of regional seminars with UNEP; papers on environmental considerations of development and desertification control; and provision of information on the state of the environment and on environmental activities in the regions.

169. The regional presence of UNEP is the subject of a separate report by the Executive Director (UNEP/GC.10/2/Add.2)

^{108/} FP/0302-77-02, FP/0302-77-03, FP/0302-77-04, FP/0302-78-01, FP/0302-79-02.

IV. ENVIRONMENTAL MANAGEMENT INCLUDING ENVIRONMENTAL LAW

A. ENVIRONMENTAL LAW (budget sub-line 1002)

170. In decision 9/10 C the Governing Council inter alia took note of the conclusions of the study on offshore mining and drilling (containing guidelines on offshore mining and drilling within the limits of national jurisdiction) annexed to the report of the Working Group of Experts on Environmental Law on the work of its eighth session, 109/ and requested the Executive Director to circulate the texts of the conclusions to all Governments for comments and to report on these matters to the Governing Council at its tenth session. Accordingly, the Executive Director, by his letter of 30 July 1981, circulated the texts to all Governments for comments and the summary of the comments received appears in annex I to the present report.

171. In accordance with Governing Council decisions 8/15 and 9/19 A, the Ad Hoc Meeting of Senior Government Officials Expert in Environmental Law was convened at Montevideo from 28 October to 6 November 1981 at the kind invitation of the Government of Uruguay. Its mandate, set out in decision 9/19 A, was to establish a framework and methods for the development and periodic review of environmental law, by focusing upon specific elements of such law, and to set out a programme, including global, regional and national efforts in furtherance of these elements. The meeting accomplished this task and its report is submitted to the Governing Council in document UNEP/GC.10/5/Add.2. The views of the Executive Director on the report of the meeting and suggested action by the Governing Council appear in annex II to the present report.

B. ENVIRONMENTAL MANAGEMENT (budget sub-line 1001)

172. Work in this area has concentrated on the development of methodologies for sound environmental management, notably cost-benefit analysis of environmental protection measures, the development of a cost-effective and simplified format for environmental impact assessment statements, and the application of the principles of integrated physical, socio-economic and environmental planning to developing country conditions.

173. Three reports have been or are being published by UNEP under the cost-benefit analysis programme. "The economics of survival", (October 1981); "Analysing the options" and "Evaluating the Environment", (November 1981) (UNEP studies 4, 5 and 6 respectively). They summarize the proceedings of the first three intergovernmental expert group meetings on cost-benefit analysis convened by UNEP.

109/ UNEP/GC.9/5/Add.5, Annex III.

174. The Fourth Intergovernmental Expert Group Meeting on Cost-Benefit Analysis (Istanbul, 4-6 November 1981) approved both promotional and practical material for publication in a volume to be entitled Guidelines on the application of cost-benefit analysis to environmental protection measures scheduled to appear in early 1982, containing selected case studies illustrating the use of innovative techniques for dealing with assessment and evaluation problems.

175. An expert group meeting on integrated physical planning (Paris, 2-4 September 1981) considered the applicability of such planning techniques and procedures to developing country conditions. A publication, Guidelines on the application of physical planning in developing countries, has been finalized and will be issued in 1982.

176. At its second session (Abidjan, 10-12 June 1981), the Committee of International Development Institutions on the Environment, which has been set up in pursuance of the Declaration of Principles for the incorporation of environmental considerations in development projects by nine multilateral development financing agencies and UNEP, inter alia requested institutions to designate focal points to facilitate contacts at the working level and to prepare institutions written reports on progress in implementing the Declaration of Principles as well as to develop a compendium of guidelines. The Committee also agreed that, in consultation with UNEP, the World Bank's Economic Development Institute would be requested to establish appropriate courses on environment and development, for staff of institutions the necessary funding for which would be the subject of bilateral negotiations between the EDI and members of the Committee, and that UNEP would establish a secretariat to provide adequate analytical support to the Committee.

V. SUGGESTED ACTION BY THE GOVERNING COUNCIL

177. The Governing Council may wish to take note of the present report and to consider taking the further action suggested in annexes I and II.

Annex I

SUMMARY OF COMMENTS FROM GOVERNMENTS REGARDING THE CONCLUSIONS
OF THE STUDY ON OFFSHORE MINING AND DRILLING

1. The Executive Director received fourteen responses to his letter of 30 July 1981. The Governments responding were: Australia; Burma; Denmark; Fiji; France; Maldives; Malta; Mexico; Netherlands; Pakistan; Senegal; Singapore; United Kingdom of Great Britain and Northern Ireland and Upper Volta. The general tenor of the responses was positive.

2. Eleven Governments expressed support for the conclusions of the Working Group:

(a) The Government of Australia suggested that the Governing Council endorse the conclusions as guidelines, and that the conclusions be supplemented by a text dealing with the responsibility and liability of States for transboundary environmental damage. Australia also suggested alterations or clarifications to some provisions of the report;

(b) The Government of Denmark reported that the guidelines in the report have already been incorporated to a large degree into Danish legislation on maritime installations and on the protection of the marine environment;

(c) The Government of Fiji supports the conclusions, and finds that they contain a highly desirable set of environmental objectives. However, Fiji noted that smaller developing nations may lack sufficient expertise and manpower to implement them fully;

(d) The Government of France expressed the opinion that decision 9/10 has already established the conclusions as guidelines, and consequently there is no need for further discussion regarding the status of the conclusions;

(e) The Government of Malta reported that the Maltese petroleum legislation provides that any person who receives a license or contract to explore or exploit minerals within the national jurisdiction must take adequate precautions to safeguard the environment, in accordance with good oil field practice;

(f) The Government of Mexico suggested that the Ad Hoc Meeting of Senior Government officials Expert in Environmental Law make recommendations regarding the status of the conclusions;

(g) The Government of the Netherlands expressed regret that the Governing Council did not adopt the conclusions as guidelines. For this reason, and also because the Conference on Law of the Sea has not been concluded, it considers that it would not be prudent for the Governing Council to adopt the conclusions at this time, and suggests instead that UNEP monitor the application of the conclusions by Governments;

(h) The Government of Senegal suggested that the Governing Council adopt the conclusions as guidelines, and that the General Assembly approve them;

(i) The Republic of Singapore suggested that the conclusions be adopted as guidelines;

(j) The United Kingdom Government noted that the report is significant as the first detailed global statement on the environmental law aspects of offshore mining and drilling, and suggested that the Governing Council adopt the conclusions as recommended minimum criteria; to give them more binding effect might jeopardize them, especially since the conclusions do not contain reservations or interpretative statements. The United Kingdom would be happy to see the conclusions forwarded to the General Assembly for adoption in a resolution;

(k) The Government of Upper Volta suggested that the Governing Council adopt the conclusions of the report.

3. Three responses did not comment on the conclusions: the Governments of Burma and Maldives stated that they had no comments. The Government of Pakistan is still reviewing the report, and plans to submit comments when its review is complete.

Suggested action by the Governing Council

4. The Governing Council may wish to consider:

(a) Taking note of the views of Governments presented above;

(b) Adopting the conclusions of the working group as recommended minimum criteria and proposing to the General Assembly to recommend that States consider the guidelines contained in the Conclusions of the Study on the Legal Aspects concerning the Environment related to offshore Mining and Drilling within the Limits of National Jurisdiction ^{1/} when formulating national legislation or undertaking the negotiations for the conclusion of international agreements for the prevention of pollution of the marine environment caused by offshore mining and drilling within the limits of national jurisdiction.

^{1/} UNEP/GC.9/5/Add.5.

Annex II

VIEWS OF THE EXECUTIVE DIRECTOR ON THE REPORT OF THE AD HOC
MEETING OF SENIOR GOVERNMENT OFFICIALS EXPERT IN ENVIRONMENTAL
LAW 1/ AND SUGGESTED ACTION BY THE GOVERNING COUNCIL

1. The Executive Director considers that the meeting laid down an important foundation for the codification and progressive development of environmental law, particularly in the context of system-wide medium-term environment programme.
2. In order to ensure effective co-ordination between the programme activities to be undertaken with regard to the topics suggested by the meeting and the on-going or planned activities of UNEP in relevant fields, the Executive Director wishes to draw to the attention of the Governments, in connection with the report of the meeting, the following:
 - (a) With regard to the objective concerning coastal zone management in chapter II, section A, paragraph 1, 2 (b) of the report, a cross reference therein to the objective concerning marine pollution from land-based sources which appears in chapter II, section A, paragraph 1, 2 (a) may be appropriate, in view of a reference made in the latter objective to the effects of land-based pollution on coastal areas;
 - (b) On soil conservation, the strategy stated in chapter I, section A, paragraph 1, 2 (c), also has relevance to the world soils policy and the plan of action for its implementation, in view of the on-going activities of UNEP in this field. Likewise, in the elements of strategy for soils conservation in chapter I, section B, paragraph 4 (f) of the report and in initial action for soil conservation in chapter I, section E, paragraph 2, 5 of the report, reference should be made to action regarding the world soils policy and the plan of action for its implementation;
 - (c) With regard to the objective concerning transboundary air pollution in chapter II, section A, paragraph 1, 2 (d) of the report, it may be suggested that this activity should emphasize the effects of such pollution on terrestrial eco-systems and inland waters, as they are its main target.

Suggested action by the Governing Council

3. The Governing Council may wish to consider:
 - (a) Approving the report of the meeting;
 - (b) Giving favourable consideration, taking into account the on-going and planned work of UNEP and its programme priorities, as well as its limited financial resources, to the implementation of work recommended by the meeting on the following topics:

1/ UNEP/GC.10/5/Add.2.

(i) Major subject areas

- a. Marine pollution from land-based sources;
- b. Protection of the stratospheric ozone layer;
- c. Transport, handling and disposal of toxic and dangerous wastes;

(ii) Other subject areas

- a. International trade in potentially harmful chemicals;
- b. Protection of rivers and other inland waters against pollution;
- c. Environmental impact assessment;

(c) Authorizing the Executive Director to continue consultations with Governments, as well as the organizations and bodies concerned within and outside the United Nations system, for the early implementation of the work on the remaining topics;

(d) Requesting the Executive Director to use the Fund programme reserve, as appropriate, to ensure the effective implementation of the programme adopted by the Governing Council, including the possible need for the organization or reinforcement of appropriate institutional arrangements at the secretariat level as well as at the Intergovernmental level.