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THE ENVIRONMENT PROGRAMME

Report of the Executive Director

This report is the basic substantive document on the environment programme. Annex I summarizes the budgetary implications for the Fund of UNEP for the biennium 1980-1981. Annex II contains a suggested draft decision.

This document reports on developments occurring before 31 January 1979; developments in the period February - March 1979 will be reported in an addendum.

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- II. SUGGESTED ACTION BY THE GOVERNING COUNCIL

ABBREVIATIONS

AAU	Association of African Universities
ACC	Administrative Committee on Co-ordination
ACCT	Cultural and Technical Co-operation Agency
ADB	Asian Development Bank
ALECSO	Arab League Educational, Cultural and Scientific Organization
APDI	Asia and Pacific Development Institute
ASFIS	Aquatic Sciences and Fisheries Information System (FAO/IOC)
BBC	British Broadcasting Corporation
CAWM	College of African Wildlife Management, Tanzania
CCA	Caribbean Conservation Association
CDS/ISIS	Computerized Documentation Systems/Integrated Set of Information Systems
CEC	Commission of the European Communities
CEESTEM	Centre for Third World Economic and Social Studies
CEFIGRE	International Training Centre for Water Resources Management
CEI	Centre d'Etudes Industrielles
CFCs	Chlorofluorocarbons
CFMs	Chlorofluoromethanes
CGIAR	Consultative Group on International Agricultural Research
CIFCA	International Centre for Training and Education in Environmental Sciences
CILSS	Permanent Inter-State Committee on Drought Control in the Sahel
CIREN	International Research Centre on Environment and Development
CNRET	Centre for Natural Resources, Energy and Transport (United Nations)
CPPS	Comisión Permanente del Pacifico Sur
CS/CFTC	Commonwealth Secretariat/Commonwealth Fund for Technical Co-operation

CTM	Comisión Técnica Mixta de Salto Grande
DANIDA	Danish International Development Agency
ECA	Economic Commission for Africa
ECE	Economic Commission for Europe
ECLA	Economic Commission for Latin America
ECOWAS	Economic Community of West African States
ECWA	Economic Commission for West Asia
EEC	European Economic Community
EIFAC	European Inland Fisheries Advisory Commission (FAO)
ELC	Non-governmental Organizations' Environment Liaison Centre
EMASAR	Ecological Management of Arid and Semi-Arid Rangelands (FAO)
ENDA	Environment and National Development in Africa
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations
FEEMA	Fundação Estadual de Engenharia do Meio Ambiente (Brazil)
FIGGE	First International Global GARP (Global Atmospheric Research Programme) Experiment
GEMS	Global Environmental Monitoring System
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Pollution (United Nations, FAO, UNESCO, WHO, WMO, IMCO and IAEA)
IADIZA	Argentine Arid Zones Research Institute
IAEA	International Atomic Energy Agency
IALS	International Association of Legal Science
IARC	International Agency for Research on Cancer (WHO)
IBPGR	International Board for Plant Genetic Resources
ICARDA	International Centre for Agricultural Research on Dry Areas
ICIPE	International Centre for Insect Physiology and Ecology

ICRAF	International Centre for Research in Agro-forestry
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICRO	International Cell Research Organization
ICSU	International Council of Scientific Unions
IDB	Inter-American Development Bank
IDEP	African Institute for Economic Development and Planning
IESA	Department of International Economic and Social Affairs (United Nations)
IFIAS	International Federation of Institute for Advanced Study
IHP	International Hydrological Programme (UNESCO)
IIASA	International Institute for Applied Systems Analysis
IIED	International Institute for Environment and Development
IITA	International Institute of Tropical Agriculture
IJO	International Juridical Organization
ILCA	International Livestock Centre for Africa
ILO	International Labour Organization
IMAT	International Mechanism for Appropriate Technology
IMCO	Inter-Governmental Maritime Consultative Organization
INFOTERRA	International Referral System for sources of environmental information (formerly IRS)
INIS	International Nuclear Information System
INTIB	Industrial and Technological Information Bank
IOB	Inter-Organization Board for Information Systems (and Related Activities)
IOC	Intergovernmental Oceanographic Commission (UNESCO)
IOCARIBE	Intergovernmental Oceanographic Commission's Association for the Caribbean and the Adjacent Regions
IPAI	International Primary Aluminium Institute
IPAL	Integrated Project on Arid Lands (UNESCO)
IRPTC	International Register of Potentially Toxic Chemicals

IRRI	International Rice Research Institute
ISO	International Sugar Organization
ISSS	International Society of Soil Sciences
IUCN	International Union for the Conservation of Nature
IUFRO	International Union of Forestry Research Organizations
IULA	International Union of Local Authorities
IVL	Swedish Air and Water Research Institute
IWC	International Whaling Commission
IWRB	International Waterfowl Research Bureau
MAB	Man and the Biosphere Programme (UNESCO)
MARC	Monitoring and Assessment Research Centre (Chelsea College, London)
MCA	Manufacturing Chemists' Association
MEDEAS	Centre d'activités développement environnement en Méditerranée
MEDI	Marine Environmental Data and Information Referral System
MEDPOL	Co-ordinated Mediterranean Pollution Monitoring and Research Programme
MIRCENS	Microbiological Resources Centres for Developing Countries
MIT	Massachusetts Institute of Technology
NIO	National Institute of Oceanography, India
OAS	Organization of American States
OAU	Organization of African Unity
OECD	Organization for Economic Co-operation and Development
OPI	Office of Public Information (United Nations)
PAHO	Pan-American Health Organization
PCBs	Polychlorinated biphenyls
PCTs	Polychlorinated Terphenyls
RCCT	Regional Centre for Technology Transfer
SAREC	Swedish Agency for Research Co-operation with Developing Countries
SCOPE	Scientific Committee on Problems of the Environment (ICSU)

SIDA	Swedish International Development Authority
SIL	International Society of Limnology
SPC	South Pacific Commission
SPEC	South Pacific Bureau for Economic Co-operation
TRANET	Transnational Network for Appropriate Technologies
UNCHS	United Nations Centre for Human Settlements (Habitat)
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Co-ordinator
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNISIST	World Information System for Science and Technology (UNESCO)
UNRISD	United Nations Research Institute for Social Development
UNSO	United Nations Statistical Office
UNU	United Nations University
URTNA	Union of National Radio and Television Organizations of Africa
USAID	United States Agency for International Development
VAP	Voluntary Assistance Programme
WDC	World Data Centre on Micro-organisms
WFC	World Food Council
WFCC	World Federation of Culture Collections
WFP	World Food Programme
WHO	World Health Organization
WMO	World Meteorological Organization
WORLD	World Register of Rivers Discharging into the Oceans

WTO	World Tourism Organization
WWF	World Wildlife Fund
WYCFD	World Youth Congress on Food and Development

INTRODUCTION

FORM AND CONTENT OF THE PROGRAMME DOCUMENT

1. The Governing Council, in decision 6/2 of 24 May 1978, urged the Executive Director to improve the quality of future programme documents in line with agreed principles 1/ on their form and content. In the preparation of the present report, the Executive Director's response to this directive has been based on the recognition that the principal purpose of the programme document is to elicit policy guidance from the Governing Council, and that it should be viewed as an instrument for action, rather than for recording or recapitulating events. The focus is therefore on substantive achievements and on proposed activities which will advance the implementation of the environment programme as a whole and of its constituent parts. The issues on which the Executive Director would welcome the policy guidance of the Council are indicated in paragraph 15 below.

2. Unlike the programme document submitted to the Governing Council at its sixth session (UNEP/GC.6/7), the present document is not divided into two parts, on subjects not treated in depth and those that are so treated. Though the nature of the presentation differs in some sub-sections for these two categories, the format followed is the same in both cases. With two exceptions - Research, evaluation and review under Earthwatch and Integrated approach to environment and development - each section is treated under the following headings: Problem addressed; Authority; Progress report; Urgent needs; 2/ Proposed objectives and strategies; 2/ Work plan; Budgetary implications. The following nine paragraphs briefly outline the content of each sub-section, under the appropriate headings.

"Problem addressed" and "Authority"

3. The content of these two sub-sections does not differ according to whether or not the subject is given in-depth treatment. The first of them indicates the basic reasons for UNEP's involvement in the area and the main issues with which the environment programme seeks to deal. The second consists of a reference to the most recent compendium of approved objectives, strategies and concentration areas. 3/

"Progress report"

4. This sub-section reviews substantive accomplishments since the last session of the Governing Council; activities which are under way, but have not yet yielded substantive results, are not reflected. Here and elsewhere in the report, ongoing UNEP-supported projects are indicated by footnote references giving the project number. The presentation generally differs for subjects treated in depth and those not so treated:

1/ Official Records of the General Assembly, Thirty-third Session, Supplement No. 25 (A/33/25), para. 286.

2/ Omitted where not relevant.

3/ UNEP/GC/INFORMATION/1/Rev.2.

(a) The presentation in this document of subjects reported on in depth to the Council in 1978 and 1979 4/ covers substantive accomplishments of UNEP and of the United Nations system. Fuller information on the activities of the United Nations system, and to some extent of Governments, in these areas is given in a series of background reports, 5/ while information on the relevant activities of non-governmental organizations is available in a background document prepared by the Environment Liaison Centre with UNEP support; 6/

(b) For most areas of the programme not yet reported on in depth, only achievements resulting from UNEP-supported projects are dealt with; other related accomplishments of the United Nations system will be covered in the forthcoming in-depth treatment of these subjects. 7/

"Urgent needs"

5. This sub-section does not appear in all sections, and its inclusion is not correlated with whether or not a subject has been treated in depth. It highlights, whenever applicable, items of immediate and priority interest, with a view to enabling the Governing Council to focus on a few issues and to advise the United Nations system and Governments on how to act on them in the immediate future.

"Proposed objectives and strategies"

6. This sub-section appears principally in the case of the subjects treated in depth in the present report and proposes modifications of objectives, strategies and goals for 1982, arising out of in-depth review and inter-agency consultations at the thematic joint programming session held in Geneva from 23 to 27 October 1978; these modifications are designed to relate the environment programme more closely to the endeavours of the United Nations system as a whole. Other areas will be similarly reviewed when they are considered in depth. Objectives and strategies are also proposed for Environmental data, which did not have them in the past.

"Work plan"

7. This sub-section indicates in tabular form, by objective, major activities to be carried out under the environment programme in the next few years, giving target dates and the organizations or Governments involved. Where possible, the tables identify steps towards the goals for 1982. For a number of reasons, some of them indicated below, the tables lack precision in certain respects. It is hoped that this defect can be remedied in future programme documents.

4/ At the sixth session: IRPTC, Health of people and of the environment, Arid and semi-arid lands ecosystems, Water, Soils, Regional seas programme, Environmental education and Information; at the seventh session: Human settlements, Integrated approach to environment and development, including ecodevelopment and use of natural resources, Environmentally sound and appropriate technologies, Industry and environment, Natural disasters and Energy.

5/ UNEP/REPORTS Nos. 1-6 (1979).

6/ FP/1600-78-01.

7/ For the schedule of in-depth treatment, see the Introductory report of the Executive Director to the Council at its sixth session (UNEP/GC.6/2), para. 35.

8. The presentation generally differs for subjects treated in depth and those not so treated:

(a) For the subjects treated in depth, the activities of the United Nations system as a whole are covered. In some cases, references to these activities are drawn from the in-depth presentations in document UNEP/GC.6/7, while in a number of other cases, the material comes from draft plans of agencies which are not yet approved by their governing bodies, and is therefore provisional;

(b) In most areas not treated in depth, the table includes only those activities which are proposed for support from the Fund of UNEP.

At both levels of presentation, the organizations indicated in parentheses in the "Activities" column are those expected to play a direct financial and/or operational role in the implementation of the activity or project referred to. For the sake of concision, many intermediate steps leading to the achievement of the results are not indicated.

9. It should be noted that, where UNEP-supported activities are concerned, the tables have been prepared in accordance with option (b) of the three possible courses of action for 1979 outlined in document UNEP/GC.7/14, on the management of the Environment Fund. However, should additional convertible currency resources become available or if more projects can be supported with non-convertible currencies, the Executive Director will, provided the Governing Council agrees to the authority he requests in that document, support additional activities, within the appropriations agreed to by the Council, from among those proposed in documents UNEP/GC/90 and UNEP/GC.6/7 and approved by decisions 83 (V) and 6/2, of 25 May 1977 and 24 May 1978 respectively.

"Budgetary implications"

10. The presentation of this sub-section is contingent on whether or not a subject has already been treated in depth. In the former instance, system-wide figures are given on the basis of data supplied by the organizations concerned. In general, it has not been easy to obtain system-wide figures, although performance in this regard has improved since last year. The defects in this respect result from such factors as the time available to compute figures, different classification of subject areas, different planning cycles, etc., and from the difficulty of determining what proportion of the expenditure of a given agency in such fields as water or human settlements is spent on environmental aspects.

11. For subjects not yet treated in depth, the tables give only the total costs of UNEP-supported projects, showing separately contributions by UNEP and other collaborators. The figures do not, however, reflect the total involvement of co-operating agencies or supporting organizations in the area concerned.

12. The different sections of the programme are naturally interrelated. For example, data collected by GEMS are relevant to such subject areas as soil degradation, tropical forests, marine pollution and regional seas, and may be derived from activities described in the sections dealing with those areas. Activities in arid and semi-arid lands ecosystems, soils, water, integrated approach to environment and development, use of natural resources and oceans contribute to one another, and the functional tasks support the entire environment programme. All programme activities, by and large, contribute to, and should ultimately culminate in, environmental management. As far as possible, these interrelationships are cross-referenced in the document.

13. Among the shortcomings of the present document which it is hoped to remedy in future presentations are the inclusion in the "Work plans" of material from draft plans not yet approved by the governing bodies of the agencies concerned (para. 7) and the incomplete nature of the system-wide figures presented in the "Budgetary implications" (para. 10). It is expected that progress towards the development of the System-wide Medium-term Environment Programme (see document UNEP/GC.7/6), in the overall context of medium-term planning and programme budgeting within the United Nations and on the basis of the continued development of thematic joint programming, will remedy these deficiencies.

14. In its consideration of the programme document, the Governing Council's attention will be drawn to other documents that have a bearing on the environment programme. Where the programming process is concerned, the Executive Director's introductory report (UNEP/GC.7/3) and his report on the System-wide Medium-term Environment Programme (UNEP/GC.7/6) are particularly relevant, while his reports on the implementation of the Plan of Action to Combat Desertification (UNEP/GC.7/10), relationships with non-governmental organizations (UNEP/GC.7/18), the inter-agency Memorandum of Understanding on natural disasters (UNEP/GC/INFORMATION/6/Add.2) and the latest supplement to the register of conventions and protocols in the field of the environment (UNEP/GC/INFORMATION/5/Supplement 2) relate to the substance of the programme.

15. The Executive Director hopes that, after reviewing the issues raised in this introduction, the Governing Council will give policy guidance on: how to meet the defined objectives; the progress made towards the goals for 1982; the proposed new or revised objectives and strategies for environmental data, human settlements, integrated approach to environment and development including ecodevelopment and use of natural resources, environmentally sound and appropriate technologies, industry and environment, energy and natural disasters, and the proposed revision of goal 15 on natural disasters; and the work plans, including in particular the activities proposed for support from the Fund of UNEP.

Chapter I

ENVIRONMENTAL ASSESSMENT

A. EARTHWATCH
(budget line 13)

1. Introduction

16. The components of Earthwatch (research, evaluation and review, monitoring, and information exchange) were discussed in detail in UNEP/GC/90. Monitoring (GEMS) was reviewed in UNEP/GC/INFORMATION/2, and the INFOTERRA (formerly IRS) sub-component of information exchange in UNEP/GC/INFORMATION/7. The IRPTC component formed the subject of an in-depth review in UNEP/GC.6/7. It is planned to provide the Governing Council at its ninth session with an in-depth review of Earthwatch and Environmental data.

2. The components of the assessment process

(a) Monitoring: the Global Environmental Monitoring System (GEMS)
(budget sub-line 1301)

(i) Problem addressed

17. The scale of man-made environmental changes resulting both from national activities and from activities outside national jurisdiction makes it extremely important to know in quantitative terms the state of the environment and the rate at which it changes in space and time. This is achieved through continued monitoring of selected environmental variables. Under GEMS special attention is given to those that describe the state of soil and vegetation cover, those that contribute to determining changes in climate or that reflect such changes, those that affect oceans and their living resources, and those that make possible the assessment of man's exposure to pollutants affecting his health.

(ii) Authority

18. The objectives, strategy equivalents and 1982 goal for this activity, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 2-3 and 8.

(iii) Progress report

Resource monitoring

19. Progress since the Governing Council's sixth session includes:

(a) First half of 1979: detailed results (reports and maps) of the pilot project on tropical forest monitoring (West Africa) will be published (FAO, UNEP); 1/

1/ FP/1102-75-05; UNEP/FUND/PROJECTS/P.17.

(b) A fact-finding mission that visited seven West African countries in mid-1978 has recommended the initiation (due in mid-1979) of a pilot project on rangelands monitoring combining satellite (Landsat) imagery, systematic reconnaissance flights at very low altitude and ground surveys (FAO/UNEP). The pilot project will be closely co-ordinated with related ongoing activities such as IPAL and EMASAR;

(c) Publication in the first half of 1979 of a framework methodology for the assessment of soil degradation providing guidelines for field applications (FAO, UNEP, UNESCO). 2/ The methodology will need to be tested for its practical value at large scale in selected areas throughout the world before it can be firmly accepted. Tentative maps (1:5 million) will be printed in the first half of 1979 covering soil degradation rate and degradation hazards in Africa north of the Equator and the Middle East;

(d) A world-wide assessment of tropical forest resources 3/ making use of all published information (both conventional and obtained through remote sensing) available to member States and international organizations is under way, and will be completed by mid-1980 (FAO, UNEP);

(e) Monitoring activities in relation to desertification in Latin America and South West Asia (see UNEP/GC.7/10, paras. 42 and 43) are the responsibility of the GEMS programme activity centre. They will be closely co-ordinated with the rangelands monitoring activities, and will provide a major input to GEMS.

Climate-related monitoring

20. Progress since the Governing Council's sixth session includes:

(a) The background air pollution monitoring network 4/ involves about 100 stations (see Fig. 1) of the regional and baseline type (WMO/UNEP). Regional stations measure turbidity under clear sky conditions and collect and analyse suspended particulate matter and wet precipitation samples. These are subjected to a variety of chemical analyses to provide information on atmospheric pollution in areas sufficiently distant from pollution sources to be but little affected by short-term fluctuations in pollution levels. Baseline stations, located in even more remote areas, are the main sites where samples for the study of long-term changes in atmospheric carbon dioxide concentrations are collected. Chemical analyses of precipitation and additional measurements (e.g. chlorofluorocarbons, carbon-monoxide, ozone profiles) are also performed at, or on material obtained from, baseline stations. Results up to 1975 have been published. 5/ The 1976 results are in the press;

2/ FP/1106-75-05; World assessment of soil degradation.

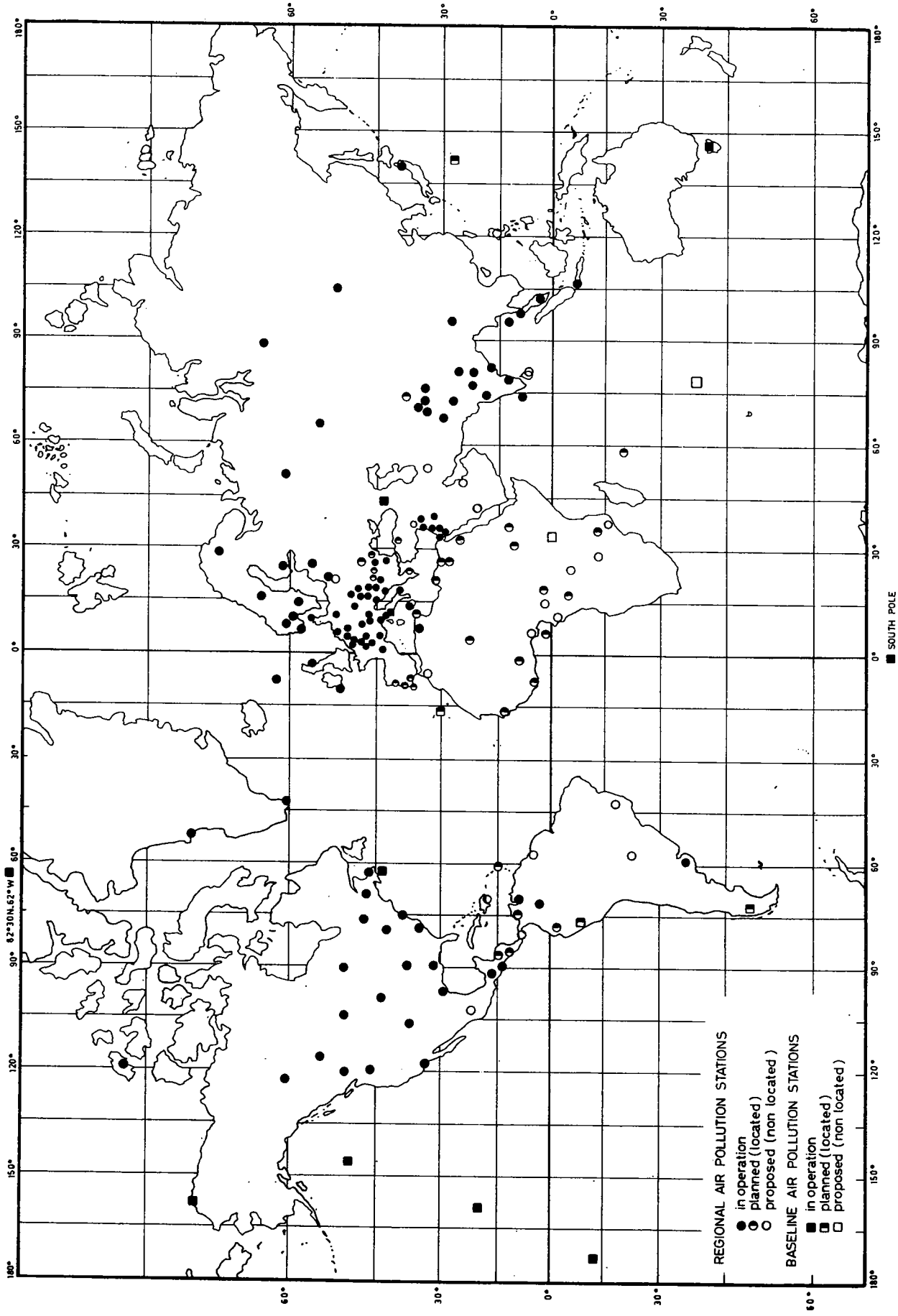
3/ FP/1301-78-04: Tropical forest resources assessment; UNEP/FUND/PROJECTS/A.149.

4/ FP/1301-74-06: Monitoring of background pollution in the atmosphere, Phase II (WMO).

5/ Global Monitoring of the Environment for Selected Atmospheric Constituents, 1975. Environmental Data Centre, Ashville N.C., 1977.

GLOBAL ENVIRONMENT MONITORING SYSTEM
 Present Stage of WMO/UNEP Network for Monitoring
 Background Air Pollution

Figure 1



(b) A feasibility study for the establishment of a baseline station on Mount Kenya (WMO/UNEP) 6/ has resulted in positive recommendations whose implementation is being studied by WMO and the Kenya Government;

(c) The global inventory of glaciers 7/ has gathered a vast amount of data on glacier volume and mass balances from 45 countries, providing the baseline against which changes due to climatic fluctuations can in the future be assessed. A report is expected in the first half of 1979 (UNEP/UNESCO);

(d) A government expert meeting on climate-related monitoring has made recommendations for the inclusion of additional variables such as solar radiation flux, albedo, ocean surface temperature, extent of snow cover, etc. besides those already measured in ongoing projects (UNEP/WMO). The recommendations will be embodied in a comprehensive project on climate-related monitoring that will start operation at the end of 1979 and will become part of the World Climate Programme.

Ocean monitoring

21. Most monitoring activities, while making a major contribution to GEMS, are charged to budget line 05 and discussed in the chapter on Oceans. Those for which the GEMS programme activity centre has had direct responsibility are:

(a) A pilot project on monitoring of ocean pollution by petroleum hydrocarbons 8/ is about to be completed and will, in 1979, provide data on the extent, frequency and location of oil slicks and tar balls along some of the main shipping lanes. Its results will be reviewed by a workshop in late 1979, at the end of the project (IOC/UNEP/WMO);

(b) The first phase of the World Register of Rivers Discharging to the Oceans 9/ (WORRI; UNESCO/UNEP) has identified the hydrological characteristics of 260 major rivers and the nature and frequency of the monitoring activities currently conducted or planned in them.

Health-related monitoring

22. Progress since the Governing Council's sixth session includes:

(a) The network of stations monitoring air pollution in urban areas 10/ covers some 60 cities in 42 countries (see Fig. 2). In most cities in the network, three stations (in residential, commercial and industrial areas) measure suspended particulate matter, smoke and sulphur dioxide. Starting in 1979, analyses of nitrogen dioxide, carbon monoxide, ozone and airborne lead will be added where appropriate. The 1975-1976 data were published in 1978 11/ with details on the quality control procedures employed (WHO/WMO/UNEP);

6/ FP/1301-76-04: Report to Governments, No. 4.

7/ FP/1301-76-02: World Glacier Inventory.

8/ FP/1301-78-02: UNEP/FUND/PROJECTS/A.96.

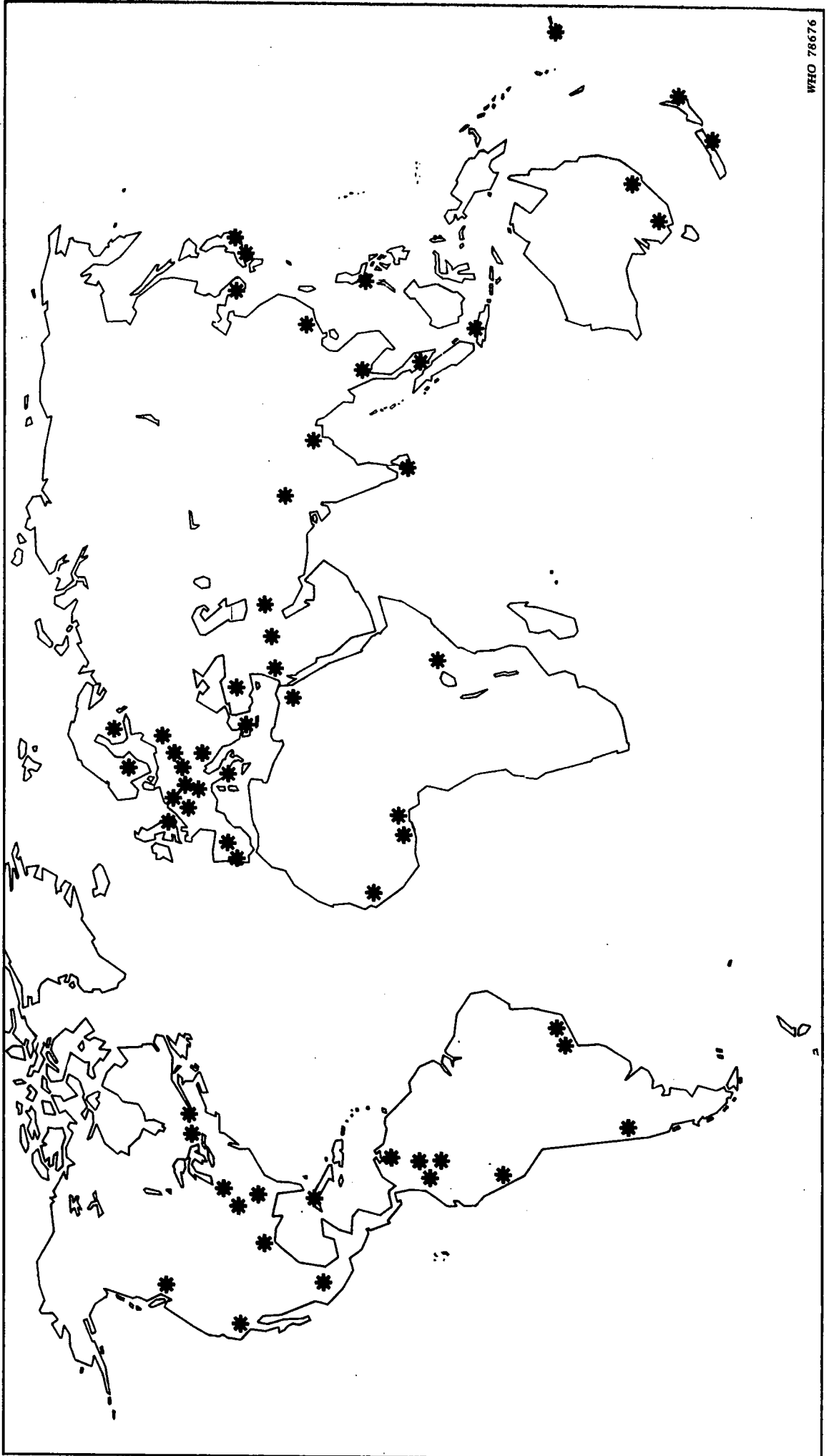
9/ FP/0501-73-06.

10/ FP/1301-75-03: Air pollution monitoring (WHO in co-operation with WMO).

11/ Air quality in selected urban areas 1975-1976. WHO, Geneva, 1978.

Figure 2

GLOBAL ENVIRONMENT MONITORING SYSTEM
Present Stage of WHO/UNEP Network for Monitoring Air Pollution
in Urban and Industrial Areas



WHO 78676

(b) Nineteen countries have been contributing data on food contamination by chlorinated hydrocarbons and selected metals. 12/ So far the data have been retrospective, covering in some cases the period 1971-1977, and will be published in the first half of 1979. From 1979 current, rather than retrospective, data will be collected, under strict quality control to ensure their comparability (FAO/WHO/UNEP);

(c) Activities preparatory to water quality monitoring 13/ (agreement on methodologies for sampling analysis and reporting, training seminars, preparation of operational guidelines, selection of sampling stations) have been completed. The network, which will eventually include 400 sampling stations (see Fig. 3) 13a/ will start operating in 1979 (WHO/WMO/UNESCO/UNEP);

(d) Assessment of exposure to air pollutants (UNEP/WHO/WMO) 14/ and monitoring of human exposure through collection and analysis of specimens of human tissues and body fluids (UNEP/WHO), 15/ as recommended by a Government Expert Group which met in 1977, are in the preparatory stage. Quality control activities and, in some cases, collection of actual data will be initiated in 1979. These activities are being undertaken on a pilot basis with a limited number of countries participating in them.

Long-range transport of pollutants

23. A network of 42 stations in 12 countries (see Fig. 4) and analysing samples of air, rain and airborne particulates over Europe (ECE/UNEP). 16/ Arrangements have been made for collecting, analysing and synthesizing the meteorological information in Western Europe 17/ that is required to assess the transport, particularly across borders, and testing transport models, of pollutants causing acid rains over that area (UNEP/WHO). Similar arrangements are expected to be made in Eastern Europe in 1979.

24. MARC Report No. 7, 1978, "Atmospheric Pathways of Sulphur Compounds" (MARC, UNEP, Rockefeller Foundation) contributes to the understanding of the issues relating to long-range transport of air pollutants.

Research and development

25. The Monitoring and Assessment Research Centre in London continues to function with the academic and administrative support of Chelsea College (London University), the financial support of the Rockefeller Foundation, the secondment of UNEP staff and the scientific advice of ICSU/SCOPE. It has devised pollution evaluation methods, identified monitoring needs, developed training courses and provided advice to Earthwatch, including GEMS, on request.

12/ FP/1301-76-03: Report to Governments, No. 5.

13/ FP/1301-76-05: Report to Governments, No. 6.

13a/ Figure 3 is not yet available, and will be included in Add.1 to the present report.

14/ FP/1301-78-03; UNEP/FUND/PROJECTS/A.128.

15/ FP/1301-78-06; UNEP/FUND/PROJECTS/A.151.

16/ FP/1301-77-02; UNEP/FUND/PROJECTS/A.61.

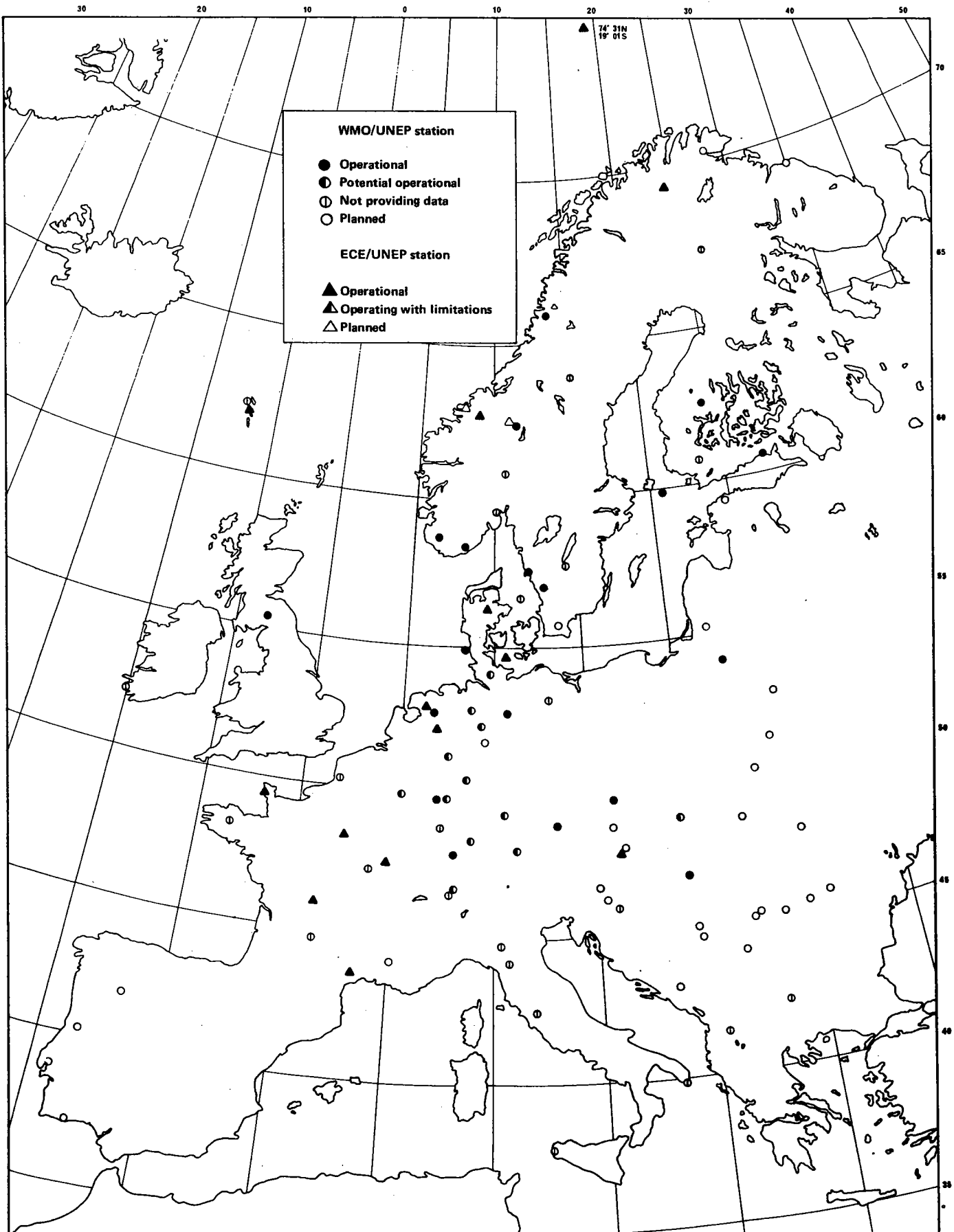
17/ FP/1301-78-05; UNEP/FUND/PROJECTS/A.150.

Figure 3

Figure 3 is not yet available, and will be included in Add.1 to the present report.

WMO/UNEP/BAPMON and ECE/UNEP Stations for Monitoring
of Long-range Transport of Air Pollution in Europe

Figure 4



(iv) Urgent needs

26. The urgent needs in relation to GEMS are for:

(a) More effective intercalibration of analytical and/or sampling methods in order to achieve better levels of comparability of data on environmental pollutants;

(b) Establishment of air pollution monitoring stations in those areas, such as large parts of Asia, that are still poorly covered by the GEMS network;

(c) Maintenance of a visual history of the state of the earth and its natural resources through the long-term storage of selected remotely sensed data from earth resource assessment and meteorological satellite systems;

(d) Adaptation of resource monitoring activities, on a case-by-case basis, to the resource management needs special to the individual countries where the resources are being monitored.

(v) Work plan

Objectives <u>a/</u>	Activities
<p><u>Goal 1 for 1982</u></p> <p>An operational GEMS with results available, evaluated and published</p> <p>(i) Resource monitoring: Development and demonstration of methodology for repeated inventories of renewable natural resources at various scales and intervals, tailored to national needs to provide a basis for, and guidance to, resource management plans. Subsidiarily, acquisition of data on the state of natural resources at national, regional and global levels</p>	<p>By 1982. Available data from major groups of current activities will have been published, reviewed and evaluated by groups of Government experts</p> <p><u>Rangeland monitoring</u> 1979-1982. Pilot project in Senegal (initial results 1980) (FAO/UNEP)</p> <p>1980. Identification of sources of funding for monitoring in other areas</p> <p>1980. Workshop on rangelands monitoring (UNEP)</p> <p><u>Tropical forest monitoring</u> 1978-1980. Assessment of tropical forest resources (FAO/UNEP)</p> <p>1979. Pilot project covering Benin, Togo and United Republic of Cameroon completed (FAO/UNEP)</p> <p>1980. Monitoring in other areas initiated (FAO/UNEP)</p> <p>1981. Identification of sources of funding for monitoring in other areas</p>

a/ In view of the broad scope and overlapping nature of the approved objectives for GEMS, the activities are presented here by functional categories.

Objectives	Activities
<p>(II) Climate monitoring: provision of information required to understand climatic conditions and variability and their impact on human activities and conversely, to understand the effects of human activities (pollution, changes in surface reflectance) on climate</p> <p>(III) Ocean monitoring (see also under Oceans, sect. II. D): acquisition of data on pollution sources, levels and pathways in the oceans, particularly as they may affect marine resources, human health and amenities</p>	<p><u>Assessment of soil degradation</u> (see also under Soils, sect. II. B. 4)</p> <p>1979. Framework methodology for assessing soil degradation state and degradation potential available for testing at large scale together with corresponding 1:5M tentative maps of Africa North of the Equator and the Middle East (FAO/UNEP/UNESCO)</p> <p>1979-1980. Methodology evaluated in the field and reviewed by government experts</p> <p>1980. If results of evaluation positive, expansion of the assessment at higher scale to selected areas on a global basis</p> <p><u>General</u></p> <p>1982. Meeting of government expert group to review and assess programmes and results of resource monitoring (UNEP)</p> <p>1979. Results of the FIGGE experiment available (WMO/UNEP)</p> <p>1979. Final report on glacier inventory (UNESCO/UNEP)</p> <p>1979-1981. Comprehensive monitoring of the environment for the assessment of causes and effects of climatic changes (UNESCO/WMO/UNEP)</p> <p>1981. Government expert group to review and assess programme and results of climate-related monitoring (UNEP)</p> <p>1979. Pilot project on monitoring of marine pollution by petroleum hydrocarbons completed. Workshop evaluates results (IOC/WMO/UNEP)</p> <p>1979. WORRI final report published (UNESCO/UNEP)</p> <p>1979-1981. WORRI continues on a regional basis as part of the regional seas programme, initially in the Mediterranean (UNESCO/UNEP)</p>

Objectives	Activities
<p>(iv) Health related monitoring: development, demonstration and application of methods providing comparable information on levels of the most common pollutants relevant to human health in various media and on their transfer between media, and determination of human exposure to those pollutants for the ultimate purpose of relating exposure to expected effects and so assess the cost of polluting activities in terms of damage to man</p>	<p><u>Air pollution monitoring</u></p> <p>1979. Monitoring of additional air pollutants (nitrogen oxides, carbon monoxide, ozone and airborne lead) initiated (UNESCO/WHO/WMO/UNEP)</p> <p>1981. Final report on the project available</p> <p><u>Water quality monitoring</u></p> <p>1979. Data collection initiated</p> <p>1981. Completion of the network, final report available (UNESCO/WHO/WMO/UNEP)</p> <p><u>Food and animal feed monitoring</u></p> <p>1979. Quality controlled collection of data on current levels of selected pollutants initiated. Inclusion of additional countries (FAO/UNEP/WHO)</p> <p>1980. Data reported</p> <p>1981. Final report on the project available</p> <p><u>Transfer of pollutants between media</u></p> <p>1979-1980. Pilot project on evaluation of transfer between media (e.g. from air to soil to crops) in a selected area</p> <p>1981. If results positive, expansion to other areas</p> <p><u>Exposure assessment</u></p> <p>1981. First data on human exposure to airborne pollutants available (WHO/WMO/UNEP)</p> <p>1981. Analysis and publication of biological monitoring data (levels of pollutants in human body tissues and fluids) collected under strict quality control</p> <p><u>General</u></p> <p>1981. Government expert group to review and assess programmes and results of health related monitoring. Initiation, on the recommendations of the Group of comprehensive health-related monitoring thus absorbing the several activities into a strongly co-ordinated operation</p>

Objectives	Activities
<p>(v) Long-range transport of pollutants: provision of data on deposition of pollutants (particularly sulphur oxides and their transformation products) in relation to the movement of air masses from the pollutant sources to distant targets, particularly across borders</p>	<p>1980. Projects completed (ECE/UNEP/WMO) 1981. Evaluation of results</p>
<p>(vi) Research and development: aims at providing methods for interpreting monitoring results and identifying monitoring requirements</p>	<p>1979-1981. MARC continues to devise pollution evaluation methods, identifies monitoring needs and ways to meet them, develops training courses and provides on request advice to Earthwatch, including GEMS (Chelsea College/Rockefeller Foundation/SCOPE/UNEP)</p>
<p>(vii) Miscellaneous:</p> <ul style="list-style-type: none"> - Assessment of relations between pollution and productivity in biosphere reserves - Integrated monitoring of long-term effects of pollution and of climatic changes on ecosystems at baseline stations 	<p>1981. Appropriate research centre starts providing similar services in the field of resource assessment</p> <p>1979. Ascertainment of feasibility, definition of requirements, selection of area(s) (UNESCO/UNEP) 1980-1982. Pilot project in selected area(s) 1982. Decision on expansion into network</p> <p>1979. Definition of requirements and selection of pilot area(s) (WMO/UNESCO/UNEP) 1980-1982. Pilot project in selected area(s) 1982. Decision on expansion into network</p>

(vi) Budgetary implications

Organization	(Thousands of \$)				
	1977	1978	1979	1980	1981
WMO	377.5	366.5	356.0	17.0	5.0
WHO	267.4	337.4	183.3	156.3	78.0
FAO	-	21.0	22.0	21.0	-
UNESCO	27.0	42.5	15.5	-	-
ECE	22.0	50.0	50.0	50.0	-
SCOPE	212.0	-	-	-	-
NIO <u>a/</u>	8.0	-	-	-	-
UNEP	1,780.3	2,274.0	3,400.0 <u>b/</u>	3,000.0 <u>b/</u>	2,800.0 <u>b/</u>
Total:	2,694.2	3,091.4	4,026.8	3,244.3	2,883.0

a/ National Institute of Oceanography, India.

b/ Planned.

(b) Information exchange(1) INFOTERRA (formerly IRS)
(budget sub-line 1302)Problem addressed

27. There is a need, especially for developing countries, to improve access to the world's environmental information sources. Environmental concerns and activities cover a very wide area, and a tremendous amount of information is already collected and available for wide use. The problem of a more effective use of global information resources can be solved only by the development and maintenance of national and international systems to link those seeking information with information sources.

Authority

28. The objectives, strategies and 1982 goal for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 3-4 and 8.

Progress report

29. After consultations with Governments, it was decided the International Referral System should be renamed INFOTERRA as of 1 January 1979. Designed within the framework of UNISIST principles to ensure maximum compatibility with existing systems, INFOTERRA has provided full referral services since 1 January 1977. The growth in size and utilization of INFOTERRA is shown in the following table:

Date	Number of participating Governments		Number of countries with sources registered		Number of registered sources		System-wide requests/month	
	Estimated at GC.6	Actual	Estimated at GC.6	Actual	Estimated at GC.6	Actual	Estimated at GC.6	Actual
to GC.4		60		1		300		5
to GC.5		70		25		3,000		40
to GC.6		87		48		5,000		150
to 31.1.79	93	94	60	63	8,000	7,100	200	150

30. The following activities have been undertaken:

(a) Establishment of four model focal points as regional centres for training and for demonstrating and evaluating the system (UNEP);

(b) Conduct of 12 national and regional INFOTERRA seminars to promote input to and use of the system (UNEP);

(c) Conduct of 188 country visits (60 during 1978) by INFOTERRA staff and consultants as part of the network development programme (UNEP);

(d) Convening of an Inter-agency Workshop on INFOTERRA (UNEP/agencies), designed to ensure full co-ordination, which was attended by 13 United Nations specialized agencies and organizations.

(e) Preparation of a report on the information needs of users and the information delivery capability, especially in developing countries (UNEP); 18/

(f) Continued support for the projects MEDI (UNESCO/IOC) and ASFIS (FAO and UNESCO); these are expected to be completed in 1979.

Urgent needs

31. The urgent needs in relation to INFOTERRA are for:

(a) Intensification of programme to improve awareness of services provided by INFOTERRA;

(b) Continuation of training programmes for focal points with emphasis on improving source quality and user participation;

(c) Improved linkages with other information systems;

(d) Continued updating and revision of INFOTERRA attributes list;

(e) Development of a methodology for evaluating INFOTERRA by 1981 with a view to making the system more responsive to users' needs.

Work plan

Objectives	Activities
<p><u>Goal No. 2 for 1982</u></p> <p>An operational INFOTERRA with nearly all countries having registered sources and making use of the service.</p> <p>(i) To promote and catalyse the improved availability of relevant environmental information for decision-makers, planners and others requiring it</p>	<p><u>Improvement of linkages with other information systems</u> (continuing exercise) (UNEP/focal points/Governments)</p> <p><u>Review, evaluate and revise system to meet source and user needs: Updating INFOTERRA attribute list</u> (continuing) (UNEP/focal points/Governments)</p> <p>1980. Methodology for evaluation of INFOTERRA (UNEP/focal points/Governments)</p> <p>1981. Comprehensive review of INFOTERRA (UNEP/focal points/Governments)</p> <p>Annual production of updated INFOTERRA Directory (UNEP/focal points/Governments)</p> <p>Provision of referral service (continuing) (UNEP/focal points/Governments)</p> <p>1979. Production of publicity INFOTERRA materials in 4 languages (English, French, Spanish, Russian) (UNEP/focal points/Governments)</p> <p><u>1979 national focal points 95; sources 9000 registered; 1980 national focal points 105; sources 1300 registered; 1981 national focal points 115; sources 16500 registered; 1982 national focal points 125; sources 20000 registered</u></p> <p>These activities would result in the accomplishment of 1982 Goal 2 (UNEP/focal points/Governments)</p>

Objectives	Activities
<p>(ii) To demonstrate the use of this information as an important tool in making better decisions relating to environmental management</p> <p>(iii) To contribute to the flow of such information from sources to user within individual countries by assisting INFOTERRA national focal points in setting up national components of INFOTERRA, and internationally by the establishment and operation of appropriate inter-governmental mechanisms, principally by a global referral network</p> <p>(iv) To assist UNEP in gaining access to environmental information in support of its activities</p>	<p>Support to other systems: 1979. MED I <u>a/</u> (UNESCO/UNEP); ASFIS <u>b/</u> (UNEP, FAO, UNESCO)</p> <p>Support for INFOTERRA <u>c/</u> (continuing) (UNEP)</p> <p>Country and agency visits, seminars (continuing) (UNEP)</p> <p>1979. Presentation of INFOTERRA at United Nations Conference on Science and Technology for Development (UNEP/focal points/Governments)</p> <p>1979. Evaluation of impact of model focal points (UNEP/focal points/Governments)</p> <p>1980. Additional model focal points (UNEP/focal points/Governments)</p> <p>1980. Focal points training courses (UNEP/focal points/Governments)</p> <p>Provision of referral services (continuing) (UNEP/focal points/Governments)</p>

a/ FP/1302-74-04.

b/ FP/1302-75-02; Report to Governments No. 5.

c/ FP/1302-74-03.

Budgetary implications

Organization	(Thousands of \$)				
	1977	1978	1979	1980	1981
WHO	735.0		387.0	395.0	395.0
UNESCO			50.0	60.0	50.0
UNEP	560.0	584.0	900.0 ^{a/}	850.0 ^{a/}	810.0 ^{a/}
Total:	1,295.0	584.0	1,337.0	1,305.0	1,255.0

a/ Planned.

(ii) International Register of Potentially Toxic Chemicals
(budget sub-line 1304)

Problem addressed

32. A number of Governments have developed, or are developing, a variety of control measures to ensure that benefits are carefully weighed against risks before wide-spread use of new chemicals is permitted. Risks must therefore be critically and objectively evaluated. Many of the relevant studies are both time-consuming and complex, and are therefore costly in human and material resources. Extensive information, from a wide variety of sources, has to be analysed for these assessments, and to facilitate this task, increasing amounts of information and data are being gathered and stored in national registers. An international programme to link national registers, to collect and, as appropriate, store data on chemicals, and to facilitate information exchange dissemination would contribute to a more efficient use of available resources and, at the same time, form an important tool for selecting priority chemicals for evaluation and control.

Authority

33. The objectives, strategies and goal for 1982 for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 5 and 8.

Progress report

34. Since the Governing Council's sixth session, 25 countries have appointed 28 national correspondents, bringing the total (at 31 January 1979) to 53 countries and 64 national correspondents. The regional distribution is shown in the following table:

Africa		Asia and the Pacific		Europe and North America		Latin America		West Asia		Total		
Coun-tries	National corresp.	Coun-tries	National corresp.	Coun-tries	National corresp.	Coun-tries	National corresp.	Coun-tries	National corresp.	Coun-tries	National corresp.	
May 1978	6	9	7	10	7	9	5	5	3	3	28	36
Jan. 1979	7	11	17	22	14	16	10	10	5	5	53	64

35. The following developments have occurred since the Governing Councils' sixth session:

(a) Provision of information on the toxicology of chemicals and their uses, and on regulations concerning chemicals, in response to 41 requests (as at 31 January 1979); 19 from Europe and North America; 11 from Asia and the Pacific, 2 from Latin America, 2 from West Asia, 2 from Africa, 3 from within UNEP and 2 from WHO;

(b) Publication of a report entitled "Attributes for the Chemical Data Register of the International Register of Potentially Toxic Chemicals". Their attributes describe the scope of information needed to evaluate the effects of chemicals on man and the environment and, at the same time, form the foundation for data storage and retrieval;

(c) Preparation of data profiles on 19 chemicals or groups of chemicals (including polychlorinated biphenyls, mercury, cadmium, organotin compounds, carbaryl, organosilicon compounds) for expert evaluation of their marine environmental hazards in the context of their potential inclusion in the technical annexes of the draft protocol for the protection of the Mediterranean sea against pollution from land-based sources;

(d) Publication in June 1978 and January 1979 of IRPTC bulletins containing information on chemicals causing concern (e.g. chloroethanes, vinylhalides, epichlorohydrin) and on many other chemicals to be tightly controlled (e.g. lead, dry-cleaning fluids, nitrites, PCBs, PCTs, flame-retardants and the pesticide malathion), as well as legislation and regulations for the control of chemical hazards. The bulletins also carried information on the activities of national and international organizations and on IRPTC activities;

(e) Approval by the WHO Executive Board of plans for an international programme on chemical safety, based on active participation of national institutions and co-ordinated by WHO. UNEP will co-operate in this programme by reshaping its ongoing activity with WHO on the preparation of environmental health criteria documents (see para. 65 (a) below) to the programme's objectives and through IRPTC, which will assist in data handling;

(f) Handling through the ILO international hazard alert system, in co-operation with a limited number of countries, of four alerts concerning newly discovered occupational risks for workers in industry and agriculture caused by chemicals.

Urgent needs

36. The urgent needs in relation to IRPTC are for:

(a) Establishment and strengthening of national registers on potentially toxic chemicals;

(b) Co-ordination of national and international programmes for the development of case files of information on potentially toxic chemicals or groups of chemicals.

Work plan

Objectives	Activities
<p><u>Goal 3 for 1982</u></p> <p>IRPTC in a position to issue warnings and technical publications</p> <p>(i) To facilitate access to existing data on the effects of chemicals on man and the environment</p>	<p><u>Study of existing systems and their potential relationship to IRPTC</u></p> <p>1979. Report on study reviewed by Scientific Advisory Committee and national correspondents with recommendations concerning those which could act as responding network partners and those which</p>

Objectives	Activities
<p>(ii) To identify the important gaps in existing knowledge on the effects of chemicals, and call attention to the need for research to fill those gaps</p> <p>(iii) To identify, or help to identify, potential hazards from chemicals, and to improve the awareness of such hazards</p> <p>(iv) To provide information about national, regional and global policies, regulatory measures and standards and recommendations for the control of potentially toxic chemicals</p>	<p>could be contributing sources for IRPTC's central register (UNEP)</p> <p><u>Review and exchange of specific information relating to chemicals</u></p> <p>1980. Strengthening of query answer service (UNEP)</p> <p>1980. Implementation of approved data processing procedures and of co-operation with network partners (UNEP)</p> <p>1979. Publication of report on detailed instructions for the selection and presentation of data on chemicals for evaluation of their environmental hazards (UNEP)</p> <p>1982. <u>Ad hoc</u> experts groups to review available data on chemicals (UNEP)</p> <p>1980-1982. Regular production of technical reports on chemicals, identifying nature and extent of information available, and the possible gaps in information required, for hazard evaluation (UNEP) (Partial fulfilment of Goal 3)</p> <p><u>Development and implementation of an international programme on chemical safety assessment</u></p> <p>1979. Discussion by World Health Assembly of proposed International Programme on Chemical Safety (WHO) (Relevant to Goal 3: issue of warnings)</p> <p><u>Participation in the establishment of international environmental hazard alert systems</u></p> <p>1979. Report and recommendations on hazard alert system (ILO, CEC, WHO, UNEP)</p> <p>1982. Fully operational international hazards alert system (ILO, CEC, WHO, UNEP) (Partial fulfilment of Goal 3)</p> <p>1980. Report on national and international legislation, administrative measures and experience on toxic substances with emphasis on toxic wastes (ECE)</p> <p>1982. Publications of regularly up-dated information on the scientific, regulatory and social-economic aspects of chemicals, including as appropriate guidelines (UNEP) (Partial fulfilment of Goal 3)</p> <p>Support for IRPTC (continuing) (UNEP)</p>

Budgetary Implications

Organization	(Thousands of \$)				
	1977	1978	1979	1980	1981
UNESCO	30.0	13.0	46.0	-	-
FAO	57.0	88.0	110.0	-	-
UNEP	715.0	957.0	968.0 <u>a/</u>	900.0 <u>a/</u>	830.0 <u>a/</u>
Total:	802.0	1,058.0	1,124.0	900.0	830.0

a/ Planned.

(c) Research, evaluation and review

37. Earthwatch-related research aims at a better understanding of environmental processes and at facilitating the interpretation of environmental data. Evaluation, the culmination of the assessment process, involves the collation, correlation and interpretation of the results of monitoring and/or research. It provides a major input to the policy formulation and planning functions of environmental management. Through review, problems are defined and gaps in knowledge and understanding are identified and suggestions made regarding further research and monitoring activities.

38. These components of Earthwatch have no budget line directly supporting them. This reflects the fact that the activities contributing to these components are scattered throughout the programme, and relate directly to a number of other areas. Thus, the health criteria programme is supported by budget sub-line 0107 (human and environmental health), and the ozone programme by sub-line 1303 (assessment of outer limits and basic human needs), while sub-line 1301 (GEMS) supports, along with monitoring, the research and evaluation activities pertaining to it. A background paper, "Evaluation and Research under Earthwatch (GEMS)" prepared as a result of a Working Group meeting on Earthwatch and of subsequent consultations with the agencies that took part in the meeting, outlines the research, evaluation and review activities currently under way in a number of United Nations agencies and discusses some of the problems involved in separating research and evaluation from each other and from monitoring, as well as from activities related to environmental management.

3. Outer limits
(budget sub-line 1303)

39. The term outer limits is used to denote the limits of tolerance of the biosphere, or different sub-systems of which it is composed, to the demands placed upon it by man's activities.

(a) Assessment of basic human needs in relation to outer limits

(i) Problem addressed

40. Widespread non-satisfaction of basic human needs leads to environmental degradation, whether in rural or urban areas, and this degradation itself makes it progressively difficult to achieve satisfaction of such needs. From the environmental standpoint, it is essential to assess the linkage between satisfaction of basic needs and environmental change, in various ecological contexts, in order to identify policy alternatives which would promote basic needs satisfaction without transgression of the outer limits.

(ii) Authority

41. The objective and strategies for this component of the Earthwatch programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 5-6.

(iii) Progress report

42. Most of the activities listed below are not specifically geared to assessment of basic human needs in relation to environmental outer limits. However, they provide a necessary background to the nature and scope of UNEP's role in this area:

(a) ILO, in co-operation with the ACC Ad Hoc Working Group on the follow up of the World Employment Programme, has prepared a conceptual framework paper on basic human needs and development, which outlines the nature of activities of respective international organizations in this field with a view to furthering co-ordination and mutual support among them. ILO has also prepared a report on basic needs approach to development, which discusses methodologies for assessment of basic needs satisfaction;

(b) The Worldwatch Institute, Kettering Foundation, UNFPA and USAID have published a book aimed at sensitizing public opinion to the need to accommodate human needs and numbers to the earth's resources;

(c) Studies on technologies for sustainable satisfaction of basic human needs, especially in respect of food, health, shelter, education, and employment in the Arab region, are being completed (ALECSO, UNEP, ASPEN Institute).

(iv) Urgent needs

43. The urgent need in this area is for empirical studies, in different ecological settings, as a basis for planning for sustainable development that will, inter alia, facilitate satisfaction of basic human needs.

(v) Work plan

Objectives	Activities
<p>Identification and promotion of environmentally sound patterns of development that would permit the attainment of sustainable satisfaction of basic human needs without transgressing the outer limits</p>	<p><u>Technologies for sustainable satisfaction of basic human needs</u></p> <p>1979. Workshop in the Arab region and publication of studies (UNEP, ALECSO, ASPEN Institute)</p> <p><u>Seminar of Arab Institutions and organizations</u></p> <p>1979. To prepare recommendations for research and planning policies and approaches, and formulate a plan for regional co-operation (ALECSO)</p> <p>Studies of community development programmes and national development strategies from the standpoint of basic human needs and environmental change will be included in the UNEP/ESCAP Regional Seminar on Alternative Patterns of Development and Lifestyles (see under environment and development)</p> <p><u>Empirical research on assessment of basic needs in relation to outer limits</u></p> <p>1981. Research reports to be published on:</p> <p>(a) Assessment of trends in selected areas in respect of food and health needs satisfaction and environmental change;</p> <p>(b) Case studies analyses for guidance on formulation of programmes for sustainable satisfaction of food and health needs (UNEP, FAO, WHO);</p> <p>(c) The nature and magnitude of international co-operation to facilitate early and sustainable satisfaction of basic human needs in respect of food (UNEP, FAO)</p>

Objectives	Activities
	<p>Analytical report and summary of country data on the state of basic needs satisfaction and national policies and measures for basic needs satisfaction (based on country replies received at ILO to a questionnaire circulated to all member Governments of ILO)</p> <p>1980. To be submitted to the annual conference of ILO following up on Plan of Action agreed at World Employment Conference, June 1976 (ILO)</p> <p>1982. Guidelines for development planning for satisfaction of basic human needs in harmony with protection and improvement of the environment (UNEP, UNFPA, ILO)</p>

(vi) Budgetary Implications

44. The budgetary implications for assessment of basic human needs in relation to outer limits are treated together with those for assessment of outer limits (see Sect. 3 (b) (v) below).

(b) Assessment of outer limits

(i) Problem addressed

45. Outer limits need to be assessed in order to make it possible to determine when they are being approached. The Governing Council has identified five elements for special attention:

- (a) Climatic changes;
- (b) Weather modification;
- (c) Risks to the ozone layer;
- (d) Bioproductivity;
- (e) Social outer limits. ^{19/}

(ii) Authority

46. The Governing Council approved at its third session strategies for the first four elements of outer limits, at its fourth session the objectives and strategies for social outer limits, and at its fifth session a goal for 1982 touching on weather modification and risks to the ozone layer. These are summarized in UNEP/GC/INFORMATION/1/Rev.2.

(iii) Progress report

Climatic changes

47. The draft of a world climate programme has been prepared for submission to the World Climate Conference (February 1979) (WMO, UNEP, UNESCO, WHO, IIASA, ICSU).

^{19/} Social outer limits are of a different nature and could be considered as social constraints to environmentally sound management.

Weather modification

48. The report of the joint WMO/UNEP informal meeting of experts on legal aspects of weather modification, which recommended nine draft principles of conduct for the guidance of States concerning weather modification was submitted to Governments for comments (UNEP). Comments have been received and will be considered by a meeting of experts designated by Governments, to be held jointly with WMO in 1979.

Risks to the ozone layer

49. The following activities have taken place:

(a) The second and third issues of the Ozone Layer Bulletin were published in July 1978 and January 1979;

(b) The second session of the Co-ordinating Committee on the Ozone Layer, (UNEP, ICSU, WMO, EEC, MCA, Governments) held at Bonn from 28 to 30 November 1978, 20/ assessed the present state of knowledge regarding the ozone layer and considered the second WMO statement on risks to the ozone layer, published in November 1978. The Committee concluded that best current estimate of an eventual steady-state depletion of the ozone layer was 15 per cent if releases of F-11 and F-12 were to continue indefinitely at the 1977 rate. Considering these findings and taking note of the conclusions of the WMO Toronto Symposium that the threat to the ozone layer was very real, and warranted continued action to control the quantity of CFMs released into the atmosphere, the Committee recommended that a comprehensive environmental assessment of the impact of ozone depletion, including the economic aspects of corrective and alternative actions, should be considered, and that national and international bodies should continue to promote vigorous monitoring and research efforts in order to achieve a further understanding of this complex problem on a reasonable time scale.

(c) An Intergovernmental meeting on chlorofluoromethanes, convened by the Government of the Federal Republic of Germany at Munich from 6 to 8 December 1978 to consider harmonization of national regulatory policies of CFCs, recommended that, as a precautionary measure, there should be a global reduction in the release of CFCs, and called on all Governments, industry and other bodies to work towards achieving a significant reduction in release of CFCs in the next few years in relation to 1975 data. The Conference also recommended that Governments provide annual production figures for CFC-11 and 12 and their major uses to UNEP, and reaffirmed the co-ordinating role of UNEP.

Bioproductivity

50. The following developments have occurred since the Governing Council's sixth session:

(a) An international nitrogen unit has been set up in the Royal Swedish Academy of Sciences to serve as a focal point for nitrogen cycling studies within the framework of the SCOPE/UNEP programme on biogeochemical cycles (SCOPE, UNEP);

(b) A regional workshop on nitrogen cycling was held in West Africa in December 1978, to evaluate the gaps in knowledge of the cycling of the element in humid tropical areas of Africa (SCOPE, MAB/UNESCO, UNEP);

(c) A meeting to discuss, inter alia, studies on carbon cycling was held at Nairobi (29 November to 2 December 1978) (SCOPE, UNEP). It was agreed to proceed with the establishment at Hamburg of a carbon cycle unit to act as a co-ordinating centre for international studies;

(d) An international advisory group for studies on photosynthesis has been set up 21/ (SCOPE, UNEP). It has agreed on the first studies to be undertaken on the evaluation of photosynthesis efficiency in tropical flora;

(e) A training course for 31 participants from 20 developing countries on the subject of photosynthesis was held in December 1978 at Madurai, India (SCOPE, UNEP).

Social outer limits

51. Three field surveys were undertaken in India, Egypt and Malta, on attitudes, values and perceptions of people in relation to environment and development programmes (UNEP/UNRISD).

(iv) Work plan

Objectives	Activities
<p><u>Climate changes</u></p> <p>No objectives. Strategies call for improved understanding of physical processes causing climatic changes, assessment of the probabilities of such changes, and additional information needed to assess the practical significance of man's impact on climate</p>	<p>February 1979. World Climate Conference - A Conference of Experts on Climate and Mankind (WMO, UNEP)</p> <p>May/June 1979. Approval of World Climate Programme by WMO Congress (WMO, UNEP, ICSU, IIASA)</p> <p>1979. Initiate the implementation of the World Climate Programme (WMO, UNEP, ICSU, IIASA)</p> <p>Late 1979. Approval by Governments and international organizations of World Plan of Action on Carbon Dioxide in the context of Climate Change (Governments, WMO, UNEP, SCOPE)</p>
<p><u>Weather modification</u></p> <p>No objectives. Strategies call for development of legal provisions to prevent damage to the environment resulting from weather modification, and of general principles and guidelines on such modification. Goal 20 for 1982 calls for agreement on the principles which should guide States in their interrelations in respect of weather modification</p>	<p>Late 1979. Agreement on a set of principles for guidance of States concerning weather modification (WMO, UNEP, Governments)</p> <p>June 1980. Completion of field studies of the precipitation enhancement project (WMO, UNEP)</p> <p>January 1982. Start of precipitation enhancement project (WMO, UNEP)</p>

Objectives	Activities
<p><u>Risks to the ozone layer</u></p> <p>No objectives. Strategies call for compilation of information on ozone monitoring and research designed to assess the risk to the stratosphere, with emphasis on techniques and instruments for measuring ozone levels and parameters affecting the ozone layer. Goal 20 for 1982 calls for agreement on the principles which should guide States in their interrelations in respect of risks to the ozone layer</p> <p><u>Bioproductivity</u></p> <p>No objectives. Strategies call for studies of the mechanism of photosynthesis and its genetics, the application of existing knowledge and the identification of areas where further research is required</p> <p><u>Social outer limits</u></p> <p>To provide information and warnings about the implications for any society of continued growth and change in terms both of disrupted environments, alienation and weakened social ties and of the new values and attitudes such growth and change demand</p>	<p>June 1979. Fourth Issue of Ozone Layer Bulletin (UNEP)</p> <p>Late 1979. Third session of the UNEP Co-ordinating Committee on the Ozone Layer to follow up the implementation of the World Plan of Action on the Ozone Layer (WMO, WHO, UNEP, ICSU, Governments)</p> <p>1980. Revised model of nitrogen circulation (UNEP, SCOPE)</p> <p>1980. Published report on sulphur cycle processes <u>a/</u> (UNEP, SCOPE, Governments)</p> <p>1980. Published report on photosynthetic efficiency in tropical flora (UNEP, SCOPE)</p> <p>1979. Completion of two studies on social response to energy conservation and energy options (see work plan for energy below) (UNEP)</p> <p>1980. Publication of reports on: (i) social constraints to energy conservation programme (ii) social responses to various energy options (iii) social responses and constraints of land management and population programmes (UNEP and others)</p>

a/ FP/1303-78-08; UNEP/FUND/PROJECTS/A.108.

(v) Budgetary implications

Organization	(Thousands of \$)				
	1977	1978	1979	1980	1981
WMO	238.0	200.0	120.0	-	-
ISCU SCOPE	-	102.0	74.0	22.0	-
IIASA	8.0	-	-	-	-
IFIAS	89.0	51.0	-	-	-
ALECSO	-	10.0	28.0	-	-
Aspen Institute	-	10.0	13.0	-	-
MIT	60.0 ^{a/}	60.0 ^{a/}	-	-	-
University of Toronto	-	-	-	-	-
University of London	-	82.0	97.0	97.0	48.0
UNEP	389.0	426.0	850.0 ^{b/}	600.0 ^{b/}	600.0 ^{b/}
Total:	784.0	941.0	1,182.0	719.0	648.0

^{a/} These figures represent a total expenditure of \$ 180,000 for the three years 1976-1978, broken down equally for each year.

^{b/} Planned.

B. ENVIRONMENTAL DATA
(budget line 16)

1. Problem addressed

52. A comprehensive system of data collection is a prerequisite to environmental assessment and management, which would otherwise have to rely on incomplete and non-comparable information. In addition, the formulation, implementation and evaluation of a system-wide United Nations environment programme requires more accurate and comprehensive information about relevant environmental activities.

2. Authority

53. Data collection is dealt with implicitly in a number of decisions of the Governing Council. 22/ Support of the United Nations system and other organizations in the provision of data has been regularly sought. 23/

3. Progress report

54. The following progress has been achieved since the Governing Council's sixth session:

(a) Environmental terms have been developed and integrated into the first draft of a list of broad terms being prepared by IOB to represent the programmes and activities of United Nations organizations (IOB, UNEP);

(b) A survey of country practices and plans in the field of environment statistics has been undertaken; the results are published in document E/CN.3/521, to be submitted to the Statistical Commission at its twentieth session 24/ (UNSO, UNEP);

(c) An in-house data base on major environmental events has been designed and put in operation on an experimental basis (UNEP).

4. Urgent needs

55. The urgent needs in relation to environmental data are for:

(a) Introduction of environmental parameters on a systematic basis in the collection, evaluation and application of statistical data;

(b) Development of a more systematic approach to the collection of environmental data on the activities of the United Nations system, which is an important prerequisite for the establishment of the System-wide Medium-term Environment Programme.

5. Proposed objectives and strategies

56. Since the Governing Council has not yet adopted objectives and strategies for environmental data activities, the Executive Director proposes the following objectives and strategies for consideration by the Council:

22/ Decisions I (1), sect. V and 48 (V).

23/ Decisions I (1), 7 (II), 27 (III), 82 (V), 83 (V) and 6/2.

24/ E/CN.3/521; FP/1600-77-02; UNEP/FUND/PROJECTS/A.64.

(a) Objectives:

- To promote the provision of comparable environmental data for purposes of rational environmental management at the national, regional and global levels;
- To collect information for the formulation, implementation and evaluation of a system-wide United Nations environment programme;

(b) Strategies:

- Development of national and international environmental statistics and indicators;
- Compilation and dissemination of information about the environmental activities of major national and international organizations;
- Compilation of information on major environmental events (including long-term changes in the environmental situation).

6. Work plan

Objectives	Activities
<p>(i) To promote the provision of comparable environmental data for purposes of rational environmental management at the national, regional and global levels</p> <p>(ii) To collect information for the formulation, implementation and evaluation of a system-wide United Nations environment programme</p>	<p>1981. Publication of environmental statistics and guidelines (UNSO, regional commissions, relevant agencies, UNEP and Governments)</p> <p>1981. Identification and development of environmental indicators in social indicator systems and environmental impact assessment (UNESCO, UNSO, OECD, UNEP)</p> <p>1981. Data base on major environmental events (operational) (information systems, UNEP)</p> <p>Annually. Data collection on activities of United Nations systems, Governments, intergovernmental and non-governmental organizations to assist in the management of the environment programme and the formulation of the medium-term plan (UNEP, agencies, IOB, Governments, ELC)</p>

7. Budgetary implications

Organization	(Thousands of US\$)				
	1977	1978	1979	1980	1981
IESA	-	629.5 <u>a/</u>	629.5 <u>a/</u>	629.5 <u>a/</u>	629.5 <u>a/</u>
ELC/Nairobi	-	33.5	22.0	22.0	22.0
UNEP <u>b/</u>	267.4	385.0	500.0 <u>c/</u>	530.0 <u>c/</u>	500.0 <u>c/</u>
Total:	267.4	1,048.0	1,151.5	1,181.5	1,151.5

a/ These figures represent a total expenditure of \$251,800 for four years, broken down equally for each year.

b/ Figures include those for the preparation of the state of the environment reports.

c/ Planned.

Chapter II

SUBJECT AREAS

A. HUMAN SETTLEMENTS AND HUMAN HEALTH
(budget line 01)I. Human settlements
(budget sub-lines 0104 and 0106)(a) Problem addressed

57. The problems of human settlements, which have reached crisis proportions, especially in the developing parts of the world, were identified as one of the major environmental problems by the United Nations Conference on the Human Environment (Stockholm, June 1972). Habitat: United Nations Conference on Human Settlements (Vancouver, May 1976) recognized that rapid population growth coupled with the absence of a concerted policy for the development of human settlements deepens this crisis which has, as its main consequences, an important impact on the quality of life and increasing environmental degradation. These problems, while shared by both rural and urban areas, are particularly acute in major cities where more than three billion inhabitants will be concentrated early in the twenty-first century. Slums and shanty towns, congested and noisy neighbourhoods, water and air pollution, problem of disposing of wastes, shortages of water and energy, etc., further exacerbate urban social problems. These environmental aspects are seen as a significant component of the problems of human settlements planning and management.

(b) Authority

58. The objectives, strategies and 1982 goals for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 10 and 27. Since their approval, the General Assembly has adopted resolution 32/162, establishing the United Nations Centre for Human Settlements (Habitat), and the Secretary-General has issued bulletin ST/SGB/168 of 12 October 1978 specifying the mandate and terms of reference of the Centre. Both the resolution and the bulletin refer to the activities of UNEP concerned with human settlements, concentrating its responsibilities on the environmental aspects and consequences of human settlements planning.

(c) Progress report

59. Since the Executive Director of the Habitat Centre assumed his functions in middle October 1978, the Executive Director of UNEP has been in continuous consultations with him over co-operation between the two organizations. Consultations between the two Executive Directors and the Bureaux of the Commission and of the Governing Council of UNEP are scheduled to be held on 5 and 6 March 1979. For the time being, therefore, paragraphs 60-61 and the work plan and budgetary implications are tentative, and do not prejudice the agreement to be reached by the two organizations.

60. The following developments have taken place since the Governing Council's sixth session:

(a) Specialists from 20 selected developing countries participated in the study tour on "General Development of Human Settlements in areas with agro-industrial complexes" 1/ in the USSR (UNEP);

(b) An expert group meeting on human settlements technology held in Bangkok (July 1978) endorsed the proposal for a survey of leading institutions in the field of environmentally sound human settlements technology to be eventually organized into the network envisaged by Goal 12 for 1982 (ESCAP, UNEP); 2/

(c) The second consultative regional meeting of the project on human settlements technology, 3/ held in Mexico (30 July - 4 August 1978), recommended the development of demonstration projects, especially those related to the applicability of environmentally sound human settlements technologies for the humid tropics (ECLA, UNEP);

(d) The Philippines 4/ and Indonesian 5/ projects for improvement of slums and marginal settlements were extensively revised to strengthen environmental aspects 6/ (UNEP, Habitat Centre, Governments);

(e) A senior environmental management advisor has been appointed to advance the incorporation of environmental considerations into the overall management project of the Capital Development Authority, Dodoma, United Republic of Tanzania 7/ (Habitat Centre, UNEP, UNDP, Tanzanian Government);

(f) Two regional expert group meetings on human settlements finance and management, one in Africa (Nairobi, 8-13 October 1978) and the other in Latin America (Mexico, 27 November - 1 December 1978) were jointly organized by the Habitat Centre and UNEP, in collaboration with ECA and ECLA, and co-sponsored by UNDP, USAID and IULA. The Nairobi meeting underscored the need for full co-operation between Habitat and UNEP in carrying out a programme on environmentally sound human settlements technology and in developing the ecosystems approach to human settlements planning. The Mexico meeting recommended, inter alia, that the international organizations should support programmes on urban ecology and environmental management of human settlements, with special attention to, inter alia, the preservation of ecosystems, environmental assessment, environmentally sound human settlements technology (eco-techniques), training and legislation;

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- 1/ FP/0104-78-01; UNEP/FUND/PROJECTS/A.79.
2/ FP/0106-78-01; Report to Governments, No. 13.
3/ FP/0106-76-02; Report to Governments, No. 3.
4/ FP/0104-76-02; Report to Governments, No. 4.
5/ FP/0104-76-03; Report to Governments, No. 6.
6/ FP/0104-76-01; UNEP/FUND/PROJECTS/P.10.
7/ FP/0104-78-03; UNEP/FUND/PROJECTS/A.129.

(g) The UNEP/UNESCO-MAB pilot project on human settlements considered as ecological systems was continued in Egypt, Papua New Guinea, Mexico, Venezuela, and Guyana. Important results obtained in developed countries are being complemented by experience accumulated in the developing world, with the aim of applying these results to human settlements policies and planning (UNESCO-MAB/UNEP); 8/

(h) The results of the integrated ecological study of the urban area of Hong Kong have been published as UNESCO-MAB Technical Note No. 12 (UNESCO-MAB/UNEP); 9/

(i) An ECA expert group meeting held at Addis Ababa from 17 to 21 July 1978 recommended a work plan to ensure self-sufficiency of the African region in terms of building materials by 1990 which takes environmental considerations into account;

(j) An expert group meeting at the Hague (August 1978) developed the basis for a Training Programme on Human Settlements Planning and Management for the whole United Nations system (Habitat Centre).

(d) Urgent needs

61. The urgent needs in relation to human settlements are for:

(a) Development of guidelines for environmentally sound human settlements planning;

(b) Dissemination of information on proper consideration of environmental factors within overall policies on human settlements planning at a national level.

(e) Proposals to amend objectives and strategies

62. Following General Assembly resolution 32/162 and in the light of the in-depth review, the Executive Directors of Habitat and UNEP have proposed to the two Bureaux 10/ that the objectives and strategies of UNEP in this area be reformulated as follows:

(a) Objectives:

- To promote the inclusion of sound environmental considerations in human settlements policies and planning as part of the overall policies for the improvement of the human environment;

8/ FP/0104-76-05.

9/ FP/0104-75-05.

10/ Joint note to be considered by the Bureaux of the two organizations during the meeting of 5 and 6 March 1979. The outcome of the meeting will be reported in the addendum to the present report.

(b) Strategies:

- To assess the impact of human settlements on the human environment at both the regional and local levels;
- To develop guidelines and methodologies for the incorporation of environmental considerations in human settlements policies and planning;
- To encourage research and training in environmentally sound human settlements planning;
- To identify, promote and catalyse efforts for testing and demonstrating environmentally sound technologies for human settlements;
- To encourage gathering, dissemination and exchange of information and data in the field of environmental aspects of human settlements planning.

(f) Workplan

Objectives	Activities
<p>To promote the inclusion of sound environmental considerations in human settlements policies and planning as part of the overall policies for the improvement of the human environment</p>	<p><u>Formulation of national policies and strategies on human settlements</u></p> <p>1979. Regional conference to review national human settlements policies (ECWA, UNCHS)</p> <p><u>Environmental aspects and consequences of human settlements planning</u></p> <p>1979. Seminar on integrated physical, socio-economic and environmental planning (ECE)</p> <p>1979. <u>Ad hoc expert group meeting on ecosystems approach to human settlements planning</u> (UNCHS, UNESCO, UNEP)</p> <p>1980. Completion of integrated ecological studies on human settlements, Phase II (UNESCO, UNEP)</p> <p>1980. Seminar on environmental aspects of rural and urban human settlements planning (UNCHS, UNEP, FAO, UNESCO)</p> <p>1980. Integrated ecological studies on human settlements, Phase II starts (UNESCO/MAB, UNCHS, UNEP)</p> <p>1981. Guidelines for environmentally sound human settlements planning (UNCHS, UNEP, UNESCO)</p> <p>1981. Report on the impact of demographic aspects of urbanization on the environment (IESA, Population Division, UNEP)</p> <p>1981. Completion of Phase II Dodoma project (UNCHS, UNDP, UNEP/Tanzanian Government)</p>

Objectives	Activities
	<p><u>Environmentally sound human settlements planning in desertification-prone areas</u></p> <p>1980. Studies on human settlements planning in the Sahel Green Belt (UNCHS, ECA, UNEP, FAO, Governments)</p> <p><u>Training in environmental aspects of human settlements planning</u></p> <p>1979. Interagency meeting for designing a United Nations system programme on human settlements planning and management training (UNCHS, UNESCO, UNEP, regional commissions, FAO)</p> <p>1979. Study tour on human settlements technology in the USSR (UNCHS, UNEP, USSR, Governments)</p> <p>1980. First series on courses related to environmentally sound human settlements planning and management training (UNCHS, UNESCO, UNEP, regional commissions, FAO)</p> <p><u>Assessment of environmental conditions of human settlements at both regional and local levels</u></p> <p>1980. Methodology for monitoring and evaluating environmental conditions in urban and rural settlements (UNCHS, UNEP, FAO)</p> <p>1981. Two pilot projects on environmental assessment of human settlements.</p> <p>1982. First quinquennial report on environmental conditions of human settlements (UNCHS, WHO, UNIDO, FAO, UNEP)</p> <p>1980. Issue of World Human Settlements Survey (UNCHS)</p> <p><u>Environmental law applied to human settlements planning</u></p> <p>1980. <u>Add hoc</u> expert group meeting (UNCHS, UNEP)</p> <p><u>Environmentally sound development of marginal settlements</u></p> <p>1979. Report on trends in housing with particular emphasis on slums and rural settlements (UNCHS)</p>

Objectives	Activities
<p><u>Goal 12 for 1982</u></p> <p>A global network of institutions to test, apply and publish advice on appropriate and environmentally sound technology, particularly for use in isolated rural areas (human settlements technology element)</p>	<p>1980. Completion of demonstration projects in the Philippines <u>a/</u> and Indonesia <u>b/</u> (UNCHS, UNEP, Governments)</p> <p>1980. Establishment of monitoring and evaluation system (UNCHS, UNEP)</p> <p>1980. Establishment of global network of leading institutions - preliminary results of pilot demonstration projects (ECLA, <u>c/</u> ECA, ECWA, UNCHS, UNEP)</p> <p>1981. Preliminary results, pilot projects in ESCAP region (ESCAP, UNCHS, UNEP)</p> <p>1982. Global network fully operational (UNCHS, UNEP, regional commissions)</p>

a/ FP/0104-76-02.

b/ FP/0104-76-03.

c/ FP/0106-77-02.

(g) Budgetary implications

Organization	1977	(Thousands of \$)			
		1978	1979	1980	1981
ECLA <u>a/</u>	-	510.0 <u>b/</u>	510.0 <u>b/</u>	-	-
ECWA	-	811.8	402.0	446.2	495.2
ESCAP	-	1,238.0 <u>c/</u>	1,238.0 <u>c/</u>	-	-
UNEP	583.0	874.0	2,500.0 <u>d/</u>	970.0 <u>d/</u>	930.0 <u>d/</u>
Total:	583.0	3,433.8	4,650.0	1,416.2	1,425.2

a/ \$130,000 from regular budget, \$890,000 from extra-budgetary sources.

b/ These figures represent a total expenditure of \$1,020,000 for two years, broken down equally for each year.

c/ These figures represent a total expenditure of \$2,476,000 for two years, broken down equally for each year.

d/ Planned.

2. Health of people and of the environment
(budget lines 0107 and 0108)

(a) Problem addressed

63. As man alters the environment to support his biological, cultural, social and economic needs, he creates new conditions which affect both his health and that of the environment - which can in the long run itself have repercussions on the health of man. Exposure to industrial and other pollution and the accumulation of biological contaminants in the food chain, for example, adversely affect both man and the environment in which he lives. In many cases, unanticipated side-effects may occur as a result of prolonged exposure to low dosages, and these may be more serious in cases of combined exposure to more than one substance. In addition, many diseases affecting man, among them malaria and schistosomiasis, are environment-related, and environmental measures are called for in an integrated control effort which will help to replace the application of chemical methods, which themselves adversely affect the environment, by less harmful and at least equally effective technologies. The use of chemical pest control in agriculture has even more widespread and visible consequences, extending throughout the food chain, and integrated management techniques are urgently required as a means of controlling pests more effectively and with less damage to the environment.

(b) Authority

64. The objectives, strategies and goals for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 11-13, and Corr.1.

(c) Progress report

65. Over the past year, the evaluation of health hazards from chemical, physical and biological contaminants have featured considerably in the programmes of United Nations agencies and international and non-governmental organizations:

(a) The programme on health effects of environmental chemicals produced further documents in the environmental health criteria series, on nitrates, nitrites and N-nitroso compounds (No. 5) and volume 1 of the "Principles and Methods of Evaluating the Toxicity of Chemicals" (No. 6). These documents assess information on the relationship between exposure to environmental pollutants (or other environmental factors) and human health, and provide guidelines for setting exposure limits (WHO, UNEP);

(b) A pilot study, "Epidemiological studies in Bombay", 11/ was carried out on the feasibility of conducting a long-term project designed to improve epidemiological methodology for the assessment of environmental hazards as they relate to human health in cities in developing countries (WHO/UNEP);

11/ FP/0107-78-01; UNEP/FUND/PROJECTS/A.98.

(c) The first International Conference on Primary Health Care, organized by WHO and UNICEF at Alma Ata, USSR (September 1978) recognized the close relationship between action for primary health care, which incorporates most aspects of the environmental approach to health, and for the attainment of an acceptable level of health for all by the year 2000;

(d) With the support of extra-budgetary funds, mainly from the Governments of the Federal Republic of Germany and Sweden and from UNDP, WHO is co-operating, through three inter-regional projects to some 35 developing countries, in the preparation of national plans and programmes for the International Drinking Water Supply and Sanitation Decade and the identification of priority projects;

(e) The Joint FAO/WHO Expert Committee on Food Additives and the Joint FAO/WHO Group of Experts on Pesticide Residues continued publication of their technical report series, providing toxicological evaluations aimed at establishing acceptable daily intakes for man and recommending limits of certain pesticide residues in specific foods;

(f) The Joint FAO/WHO Food Standards Programme 12/ (Codex Alimentarius Commission) continues, with UNEP support, to publish 13/ lists of additives evaluated for safety in food;

(g) National programmes for food contamination surveillance and monitoring and the development of regulatory measures are now well established in Kenya and Zambia as a result of the FAO/UNEP food contaminants project. 13/ Further international training programmes organized under FAO/UNEP auspices are still ongoing at Mysore, India; 14/

(h) An International Congress on Parasitology, 15/ held under the sponsorship of UNEP and the Polish Academy of Sciences, considered a number of environmental parasitic diseases, giving priority attention to malaria, schistosomiasis and other zoonotic diseases. A recommendation for the establishment of a network of WHO zoonosis centres was given high priority;

(i) The WHO special programme for research and training in tropical diseases is incorporating integrated ecologically sound control methods in its activities on schistosomiasis and malaria;

(j) FAO and UNEP have decided to organize jointly the Panel of Experts on Integrated Pest Control;

(k) A second joint UNEP/ICRPE group training course 16/ on "Components essential for ecologically sound pest and vector management systems", held at Nairobi, was attended by scientists from 30 developing countries.

12/ FP/0107-75-06.

13/ FP/0107-75-02.

14/ FP/0107-75-07.

15/ FP/0108-78-01, UNEP/FUND/PROJECTS/A.99.

16/ FP/0108-76-02.

66. The following reports have been published:

(a) Report on the Joint FAO/WHO/UNEP Conference on Mycotoxins, held at Nairobi in 1978, 17/ which highlights recommendation for surveillance and control measures to reduce contamination by mycotoxins;

(b) Final progress report of the ICIPE project "Development of ecological elements in pest management systems for species of importance in agriculture and human health".

(d) Urgent needs

67. The urgent needs in relation to health of people and of the environment are for:

(a) Development of a co-ordinated programme on environmental health in the working environment;

(b) Development of guidelines for setting standards in different socio-economic settings, including methodologies for economic impact analysis of their applications;

(c) Comprehensive methods of economic appraisal of pest management systems;

(d) Development of ecologically sound integrated methods in malaria and schistosomiasis control, and environmentally sound use of chemicals.

(e) Work plan

Objectives	Activities
(i) To improve the basic health of man and his living environment, with special attention to improving water supply and waste disposal	1979 onwards. Prevention of health risks through surveillance of drinking water quality (UNICEF, UNDP, World Bank, UNEP) (see also chapter II, sect. B, 5, Water)

17/ FP/0107-75-01, UNEP/FUND/PROJECTS/P.11.

Objectives	Activities
<p>(ii) To evaluate any harmful effects on human health posed by chemical and non-chemical pollution of air, water, food and the working environment, and to assess the total effects of exposure resulting from various media</p>	<p><u>General hazards to human health</u></p> <p>1979 onwards. Preparation and publication of further environmental health criteria documents (approx. 10 per year) and of Executive Summary (WHO/UNEP)</p> <p>1979. Publication of "Principles and Methods for Evaluating the Toxicity of Chemicals, Volume II" (WHO, UNEP, IARC, FAO, ILO, IAEA)</p> <p>1979 onwards. Preparation and publication of further IARC monographs on the carcinogenic risk of chemicals (IARC)</p> <p>1979. Approval by WHO Assembly of an international programme on chemical safety. The outcome will impinge on UNEP co-operation with WHO in the field of chemical assessment (WHO/UNEP)</p> <p>1979. Review of priority pollutants for assessment at national and international levels (WHO, IARC, ILO, FAO, Governments, UNEP)</p> <p>1981. Publication of a monograph on epidemiological methods for the assessment of the health effects of environmental agents (WHO/UNEP)</p> <p>1979 onwards. Further reports of the joint FAO/WHO Expert Committees on Food Additives and Pesticide Residues (FAO/WHO)</p> <p>1979. Final conclusions of studies on safety of irradiated foods (FAO/IAEA)</p> <p><u>Occupational health (see also section I.A. 2(a), GEMS)</u></p> <p>1980. Publication of a review on occupational cancer (ILO)</p> <p>1980. Publication of a review of occupational exposure to harmful environmental agents (WHO, ILO)</p> <p>1980. Development of environmental and occupational health programme in Egypt <u>a/</u></p>

a/ FP/0302-78-03; UNEP/FUND/PROJECTS/A.131.

Objectives	Activities
<p>(iii) To recommend measures to protect the health of people and the environment effectively against environmental pollution</p>	<p>1981. Review of the health effects resulting from occupational exposure to continued hazardous conditions. Guidelines on the evaluation of environmental agents in the work place (WHO)</p> <p>1982. Guidelines and methods for research in occupational exposure to combined hazards (WHO)</p> <p><u>Health of ecosystems</u></p> <p>1979. Symposium on the effects of pollution on vegetation (ECE, Government of Poland, UNEP)</p> <p><u>Epidemiological studies</u></p> <p>1980. Pilot phase of study completed (WHO, UNEP)</p> <p>1982. Final report, evaluation and recommendations on application of results (WHO, UNEP)</p> <p>Annual. Further recommendations of Codex Alimentarius Commission on the protection of food against environmental contaminants and advice to Governments in this respect (FAO, WHO, ILO, IAEA, IARC, UNEP)</p> <p>1979. Recommendations for the international management of high-level and alpha-bearing wastes (IAEA/UNEP)</p> <p>1980. Publication of revised international drinking water standards (WHO/UNEP)</p> <p>1980. Publication of guidelines on health aspects of exposure to non-ionizing radiations (WHO/UNEP) <u>b/</u></p> <p>1982. Publication of recommended occupational exposure levels for selected heavy metals, solvents, pesticides and dusts (WHO, ILO)</p> <p>1981. Fungal contamination of food: report on project on Fungal Contamination Control of food and health <u>c/</u> (FAO, IARC, UNEP)</p> <p>1981. Publication of revised basic radiation safety standards (IAEA, ILO, WHO)</p> <p>1981. Publication of guidelines on the development of environmental quality standards (WHO/UNEP)</p> <p><u>Training</u></p> <p>Continuing: training in food safety (FAO/WHO/UNEP/IARC)</p>

b/ FP/0702-78-02; UNEP/FUND/PROJECTS/A.111.

c/ FP/0107-78-03; UNEP/FUND/PROJECTS/A.130.

Objectives	Activities
<p>Activities under objectives (ii) and (iii) contribute to the achievement of Goal 5 for 1982: concrete advice for use by Governments in dealing with priority pollutants</p> <p>(iv) To participate fully in work aiming at the control of the endemic diseases induced by specific environmental conditions</p> <p>(v) To develop and implement environmentally sound pest management systems for controlling certain pests affecting health and agricultural production</p> <p>Activities under objectives (iv) and (v) contribute to the achievement of Goal 6 for 1982: implementation of action plans to demonstrate environmentally sound methods of controlling schistosomiasis, malaria and cotton pests</p>	<p>1980 onwards. Training courses in pollution control (WHO, UNEP)</p> <p>1980. The determination of costs acceptability and practicability of alternate methods or of integrated methods for malaria and schistosomiasis control (WHO)</p> <p>1979. Report on first phase of African inter-country programme for the development of integrated pest control in cotton growing (FAO/UNEP)</p> <p>1980. Report on first phase of Near East inter-country programme for the development of integrated pest control in cotton growing (FAO/UNEP)</p> <p>1982. Conclusions on the development and application of integrated pest control systems in agriculture. Dissemination of results in the environmental control of malaria, schistosomiasis and cotton pests (FAO/WHO/UNEP)</p> <p><u>Training</u></p> <p>1980. Training in selected integrated methods of controlling pests for technicians and professionals (WHO)</p>

(f) Budgetary Implications

Organization	(Thousands of \$)				
	1977	1978	1979	1980	1981
WHO	4,300.0	4,400.0	3,313.0	3,098.0	3,150.0
UNEP	2,390.0	1,649.0	2,060.0 <u>a/</u>	1,570.0	1,530.0
Total:	6,690.0	6,049.0	5,373.0	4,668.0	4,680.0

a/ Planned.

B. TERRESTRIAL ECOSYSTEMS
(budget lines 11 and 17)

I. Arid and semi-arid lands ecosystems including
desertification
(budget line 17 and sub-line 1101)

68. In order to eliminate overlapping of activities undertaken in implementing the Plan of Action to Combat Desertification with activities in the area of arid and semi-arid lands ecosystems, the Executive Director is proposing the creation of a new budget line, 17, the proposed allocation for which is given in annex I. Other activities involving sub-humid tropical ecosystems, particularly those dealing with land-use issues, will remain in budget sub-line 1101.

(a) Problem addressed

69. In recent years national, regional and international attention has focussed on the increase of aridity and desertification and the declining productivity of arid and semi-arid lands as a result of natural and man-influenced factors. Overgrazing, slash-and-burn, removal of vegetation cover for fuel and fodder and sub-marginal crop-land development are among the practices which cause soil erosion on an increasing scale, affecting hydrology and generally lowering the productive potential of the arid and semi-arid regions. Furthermore, the destruction of vegetation may directly affect the climate adversely, thus accelerating the process of desertification. The prospects for expanding food production in these regions will therefore largely depend on man's ability to use available productive land rationally, stop desert creep and reclaim desertified areas that were once productive.

(b) Authority

70. The objectives and strategies and 1982 goal for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 13-14 and 20. General Assembly resolutions 32/169, 32/170, 32/172, 33/88, 33/89 and 33/116 C deal with desertification and the implementation of the Plan of Action.

(c) Progress report

71. A full progress report on work in arid and semi-arid lands ecosystems, including the implementation of the Plan of Action to Combat Desertification, is given in document UNEP/GC.7/10.

(d) Urgent needs

72. The urgent needs in relation to this component of the environment programme are for:

(a) Intensification of national, regional and global efforts to implement the Plan of Action to Combat Desertification;

(b) Development of specific, economical and appropriate technologies capable of practical application for development of arid and semi-arid areas as for combating desertification, particularly in the developing countries having insufficient national capabilities and resources.

Work plan

Objectives	Activities
<p><u>Goal 7 for 1982:</u></p> <p>"Concrete achievements in the implementation of the Plan of Action to Combat Desertification ..."</p> <p>(1) To arrest and control the processes of desertification, erosion and salinization</p>	<p>1979. Publication and distribution of a manual on food and fodder shrubs for arid zones (FAO)</p> <p>1979. International Expert Consultation on Irrigated Agricultural Development, Irrigation and Environment (ECWA, FAO, WMO, UNESCO)</p> <p>1980. Publication of a review of meteorological and hydrological aspects of desertification phenomena (WMO)</p> <p>1980. Publication of review and synthesis of information on desertification phenomena, processes and related problems (UNESCO, UNDP, UNEP)</p> <p>1980. Publication of methodology for compilation of desertification maps at different scales (FAO, UNESCO, UNEP)</p> <p>1981. Publication of results of monitoring and research on agrometeorology, hydrology and climatology in arid zones (WMO)</p> <p>1980-1981. Survey of agricultural resources conservation in the ECWA region (ECWA)</p> <p>1982-1983. Case studies on resources conservation in rainfed farming and forestry, and socio-economic effects of desertification on rainfed farming and forestry development (ECWA)</p> <p>1978-1982. Training courses in the USSR in sand dune stabilization, salinity control under irrigation and improved pasture management for specialists from developing countries (UNEP, Government of the USSR) (see also soils, sect. II B.4)</p> <p>1978-1979. Training courses in China in sand dune stabilization for the specialists from developing countries (UNEP, China, Governments)</p> <p>1980. Establishment of a regional Desert Creep and Rangeland Management Institute in Libya (FAO)</p> <p>1981. Training course in comprehensive arid zone conservation in Africa and the Near East (FAO, University of Arizona)</p> <p>Continuing. Training and dissemination of information on agro-meteorology and hydrology (WMO)</p>

Objectives	Activities
<p>(ii) To restore the productivity of formerly productive areas</p>	<p>1982. Establishment of regional North-Mediterranean anti-desertification centre in Spain (UNEP, Governments)</p> <p>1982. Establishment of agro-meteorological and hydrological service in Sahelian countries and implementation of relevant aspects of the Plan of Action (WMO)</p> <p>1982. Development of guidelines and model projects for integrated agro-industrial regional development in areas subject to desertification</p> <p>1979. Publication of "State of knowledge report on grazing lands" (UNESCO, UNEP)</p> <p>1980. Establishment of documentation centres in Latin America and the Middle East (UNEP, IADIZA)</p> <p>1980-1981. Regional Seminar on Resources Conservation Policies in the ECWA region (ECWA)</p> <p>1981. Formulation of contingency planning for droughts (ILO)</p> <p>1981. Publication of report on the survey on the establishment of biosphere reserves in arid and semi-arid zones (UNESCO)</p> <p>1981. Expert meeting on land use guidelines (FAO/UNEP-SCOPE-ICRAF)</p> <p>1982. Development of land use guidelines (FAO-UNEP-SCOPE-ICRAF-Govts.)</p> <p>1982. Publication on land use (FAO-UNEP)</p> <p>1983. Introduction of improved technique on fuelwood (FAO-UNIDO-Governments)</p> <p>1982. Implementation of the six transnational projects a/ to combat desertification (see UNEP/GC.7/10). Consultative Group for Desertification Control (FAO, WMO, UNESCO, UNEP, UNIDO, ECWA, SCOPE, ICRAF, Governments)</p> <p>1980. Training courses on fuelwood production techniques in Sahel (FAO, CILSS)</p> <p>1981. Training for planners (ILO)</p> <p>1981. Training courses on the hydrology of arid lands (UNESCO, ALECSO, UNEP); Training courses on integrated approach to land use in the Sahel (UNESCO, FAO, UNDP, Institut du Sahel)</p>

a/ The South American and Southwest Asian transnational desertification monitoring projects are undertaken in co-operation with GEMS.

Objectives	Activities
<p>(iii) To improve water availability and quality and animal production in these ecological systems</p>	<p>1979. International Symposium on Hydrological aspects of droughts, New Delhi (UNESCO-IHP)</p> <p>By 1980. Technical assistance in drafting legal instruments for countries sharing water resources (FAO)</p> <p>1980. Completion of studies on effects of irrigation on the hydrological environment, (UNESCO)</p> <p>Completion of studies on arid zone hydrology (UNESCO-IHP)</p> <p>Publication of research results on ways of assessing the interaction between groundwater and river flow (UNESCO)</p> <p>Report on assessment of saline and brackish water resources in desert areas (UNESCO, ALECSO, UNEP)</p> <p>1980. Publication of efficiency in the use and re-use of water (IESA)</p> <p>1980. Publication of results on water, wildlife and national park legislation in Africa (FAO) and on shared ground-water resources in arid and semi-arid areas</p> <p>1980-1981. Report on studies on livestock management and rangeland development in the ECWA region (ECWA)</p> <p>1981. Publication of research results on development and management problems of rangelands in Tunisia, Upper Volta, Niger and Chad (FAO)</p> <p>1982. Implementation of co-ordinated projects under MAB Project No. 3 and FAO's activities on grazing lands (to be specified with assistance of agencies) (UNESCO, FAO, UNEP)</p> <p>1982. Publication of research results on appropriate farming systems for the dry areas (ICARDA, UNEP, CGIAR)</p> <p>1982. Publication of research results on appropriate farming systems in the semi-arid tropics (ICRISAT, UNEP, CGIAR)</p>

(f) Budgetary Implications

Organization	(Thousands of \$)				
	1977	1978	1979	1980	1981
ESCAP	42.6 <u>a/</u>	42.6 <u>a/</u>	42.6 <u>a/</u>	-	-
ECLA <u>b/</u>	33.3 <u>c/</u>	33.3 <u>c/</u>	33.3 <u>c/</u>	-	-
UNESCO <u>c/</u>	699.0	887.0	240.0	260.0	280.0
UNEP	2,850.0	2,600.0	3,150.0 <u>d/</u>	2,270.0 <u>d/</u>	1,730.0 <u>d/</u>
Total:	3,624.9	3,562.9	3,465.9	2,530.0	2,010.0

a/ These figures represent a total expenditure of \$128,000 for three years, broken down equally for each year.

b/ \$50,000 from regular budget and \$50,000 from extra-budgetary sources.

c/ These figures represent a total expenditure of \$100,000 for three years, broken down equally for each year.

d/ Planned.

2. Tropical woodlands and forest ecosystems (budget sub-line 1102)

(a) Problem addressed

73. Tropical woodlands and forests are subjected to pressure from numerous competing human activities: human settlements, agriculture, firewood supply, large scale lumbering and road construction all have disruptive effects on their life cycles, water resources, soil fertility, genetic resources and local climatic stability. Unless effective measures are taken to reverse the present trend and to manage every hectare to best advantage, these pressures will lead to rapidly diminished forest areas in tropical regions, and thus decrease a resource base upon which the well-being of millions of people depends.

(b) Authority

74. The objectives and strategies in this area, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 14-15.

(c) Progress report

75. The following developments have taken place since the Governing Council's sixth session:

(a) Adoption of a Declaration on Forestry Policy by the eighth World Forestry Congress, held at Jakarta from 16 to 28 October 1978 (FAO, Governments). The Declaration urges Governments to adopt well-balanced land-use and management practices for forests, and calls for strengthening international co-operation in the fields of inventorying, management and the conservation of forest resources, especially in the developing countries;

(b) Completion of maps and reports resulting from the pilot project on monitoring of tropical forest cover in Benin, Togo and the United Republic of Cameroon 18/ (UNEP, FAO);

(c) Publication of a state-of-knowledge report on "Tropical forest ecosystems" (October 1978) In English: French and Spanish issues are being prepared (UNESCO, UNEP, FAO);

(d) Initiation of 11 projects in Asia, Africa and Latin America as parts of an integrated network of pilot projects aimed at improving the proper management of tropical forests and strengthening and training local manpower (UNEP, UNESCO, national MAB committees).

(d) Urgent needs

76. The urgent needs in relation to tropical woodlands and forest ecosystems are for:

(a) Development of ecologically sound techniques for land-use planning for forests and wildland areas;

(b) Improved understanding of the characteristics of plant species to facilitate integrated use and sound management of the tropical forests, particularly for the benefit of local populations;

(c) Collection of data on world-wide efforts aimed at planting trees in order to evolve a global trees programme;

(d) Assessment of risks of continued depletion of tropical forests, and development of alternatives to existing practices that would ensure rational management of tropical forests.

(e) Work plan

Objectives	Activities
(I) To identify the extent of world forest cover and to initiate assessment of trends of forestation and deforestation	1980. Results of the assessment of tropical forest monitoring available (FAO, UNEP)
(II) To support and encourage concerted research programmes on the effects of tropical forests on the atmosphere and the water regime, soil changes following their conversion to other uses, animal/plant relations, the minimum self-maintaining area, and suitable agricultural systems.	1980-1982. Publication of a series of "Research notes for planners" (UNESCO, UNEP, National Research Institutions) 1984. Completion of a network of pilot projects for research and training and management in Africa, Asia and Latin America (UNESCO, UNEP)

Objectives	Activities
<p>(iii) To develop guidelines for management of tropical forest ecosystems with a view to regular and sustained production</p> <p>(iv) To ensure the best utilization of natural forest ecosystems, applying appropriate technologies to accelerate and improve techniques for planting and regeneration</p>	<p>1979. Conference on Agrarian Reform and Rural Development (FAO, Governments). Policy guidance on rural land use</p> <p>1981. Case studies on sustained productivity of forests (UNESCO, FAO, UNEP)</p> <p>1982. Guidelines on agroforestry as a result of field research (FAO, ICRAF, UNEP)</p> <p>1984. Ecological checklists and procedures in land use planning in tropical forest areas (UNESCO, FAO, UNEP)</p> <p>1979. Training courses in eco-management <u>a/</u> (UNESCO, UNEP, Government of the German Democratic Republic)</p> <p>1980. Campaigns of public information <u>b/</u> on consequences of tropical deforestation (FAO, UNEP, Governments)</p> <p>1982. Establishment of documentation centres - seminars and conferences for planners and decision-makers on a regular basis (UNESCO, UNDP, UNEP)</p>
<p><u>Goal 7 for 1982</u></p> <p>"... advance implementation of world-wide trees programme"</p>	<p>1982. Advanced implementation of a worldwide campaign to promote tree planting and public awareness of the importance of trees (UNESCO, UNEP)</p>

a/ FP/1102-78-01; UNEP/FUND/PROJECTS/A.118.

b/ FP/1102-78-02; UNEP/FUND/PROJECTS/A.126.

(f) Budgetary Implications

Organizations and Governments	(Thousands of \$)				
	1977	1978	1979	1980	1981
UNESCO	181.7	200.6	194.2	171.2	-
FAO	80.0	80.0	80.0	-	-
Government of the German Democratic Republic	-	73.0	129.5	-	-
Mission International Royal Geographic Society, Sarawak Government, Elyohon Television	-	100.0	-	-	-
Governments of Benin and United Republic of Cameroon	20.0	20.0	20.0	-	-
UNEP	369.6	576.0	1,100.0 ^{a/}	400.0 <u>a/</u>	400.0
Total:	651.3	1,049.6	1,523.7	571.2	400.0

^{a/} Planned.

3. Mountain, island, coastal and other ecosystems
(budget sub-line 1105)

(a) Problem addressed

77. Mountain ecosystems have proved to be very fragile. In some areas of the world, especially in densely populated regions such as the Andes and the Himalayas, the rapidly increasing pressure of human activities has gone so far that these ecosystems are rapidly deteriorating and losing their vegetation cover and soils. Exploitation of island and coastal ecosystems has also led to heavy damage, particularly to mangroves and coral reefs, which play a fundamental role in protecting their natural resources.

(b) Authority

78. The objective and strategies in this area, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, page 15.

(c) Progress report

79. The following progress has been achieved since the Governing Council's sixth session:

(a) Publication of "State of Knowledge on Andean ecosystems" (Phase 1) 19/ has been completed (UNESCO, UNEP);

(b) Six pilot projects aimed at promoting ecologically sound management of the Andean region have been established 20/ in Colombia, Ecuador, Peru, Bolivia, Chile and Argentina (UNESCO, UNEP, Governments).

(d) Urgent needs

80. The urgent need in relation to these ecosystems is for the evolution of environmentally sound strategies for their management.

19/ FP/1105-75-02.

20/ FP/1105-77-01; UNEP/FUND/PROJECTS/A.56.

(e) Work plan

Objectives	Activities
<p>To initiate activities for improving knowledge of such ecosystems such as temperate forests, mountains, islands, lake and sea shores, with a view to their integrated management</p>	<p>1979. Holding of fourteenth Pacific Science Congress (UNEP, USSR, Governments): data on the state of the environment and natural resources in the Pacific countries</p> <p>1979. Study tour on incentives for community involvement in upland conservation (FAO)</p> <p>1979-1980. Preparation of audio-visual aids for training and extension in upland conservation (FAO)</p> <p>1981. Implementation of integrated pilot projects of ecologically-oriented research, training and information in the Andes (UNESCO, UNEP)</p> <p>1981. Guidelines for ecologically sound management of mangroves in the Caribbean (UNEP, UNESCO, UN/OETO, SIERRA CLUB)</p> <p>1979. Workshop on African limnology held, collection and analysis of data on African fresh water <u>SIL</u> (International Society of Limnology), <u>UNEP</u></p> <p>1979-1982. Collection and use of ecological data throughout the Mediterranean ecosystem on a co-operative basis (UNESCO, UNEP, <u>Ecothèque méditerranéenne</u>)</p> <p>1982. Data on Himalayas mountain region collected and plans for ecologically sound management prepared (IUCN, UNEP)</p>

(f) Budgetary implications

Organizations and Governments	(Thousands of \$)				
	1977	1978	1979	1980	1981
UNESCO	41.2	41.2	41.2	30.2	-
Governments and Institutions of Colombia, Ecuador, Chile, Peru, Bolivia, Argentina	530.9	530.9	530.9	530.9	-
EARTHSCAN	-	9.9	-	-	-
IUCN	-	9.4	-	-	-
USSR State Committee for Science and Technology	-	-	2,475.0	-	-
UNEP	15.2	160.0	550.0 <u>a/</u>	200.0 <u>a/</u>	200.0 <u>a/</u>
Total:	587.3	751.4	3,597.1	761.1	200.0

a/ Planned.

4. Soils
(budget sub-line 1106)

(a) Problem addressed

81. Although a great number of activities around the world are undertaken to prevent soil degradation and soil loss, they are often not well co-ordinated and appear quite insufficient, considering the vastness of the problems of soil degradation and soil loss.

(b) Authority

82. The objectives and strategy for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, page 16.

(c) Progress report

83. The following developments have occurred since the Governing Council's sixth session:

(a) Publication of "Assessing soil degradation", "Organic material and soil productivity", "China: recycling of organic wastes in agriculture" in 1978 (FAO);

(b) Framework of a soil degradation methodology providing guidelines for field application and maps of soil degradation rate and of degradation hazards (see para. 19 (c) under GEMS) (FAO, UNESCO, UNEP, ISSS);

(c) Conduct of training courses at Moscow, on sand dune fixation and means of arresting soil erosion (10 August - 29 September 1978) and at Ashkhabad, on reclamation of saline irrigated soils (4 September - 23 October 1978). 21/ Representatives from respectively 13 and 14 countries participated (USSR, UNEP).

(d) Urgent needs

84. The urgent needs in relation to soils are for:

(a) Identification of the most important elements of an integrated soil policy, particularly for developing countries;

(b) Development and application of integrated soil management practices, in order to reduce soil degradation and to restore productivity of degraded soils;

(c) Dissemination of knowledge on integrated soil management, particularly in developing countries.

(e) Work plan

Objectives	Activities
<p>To investigate soil degradation and soil loss processes and to help prevent soil degradation and restore or improve soils which have been damaged or degraded through integrated soil management</p>	<p><u>Research studies</u></p> <p>1981. Progress report on the erosive effects or rainstorms (UNEP, IITA, FAO)</p> <p>1981. Progress report on how to increase production and conserve soil and water, particularly in arid zones (UNEP, ICARDA, ICRISAT)</p> <p>1982. Report on soil pollution caused by fertilizers and biocides (UNESCO)</p> <p>1981. Report on obstacles to proper soil conservation (UNEP, IFIAS)</p>

Objectives	Activities
<p>Governing Council decision 6/5 C on seminars on soil conservation policy</p> <p>Goal 7 for 1982: "... publication of guidelines to control soil degradation"</p>	<p><u>Assessment</u></p> <p>1979. Report on land evaluation criteria for specific land uses (FAO)</p> <p>1979. Report on the agro-ecological zones, methodology and results for Africa (FAO)</p> <p>1979. Guidelines for prognosis and monitoring of salinity and sodicity (FAO)</p> <p>1980. Assessment of potential of agro-ecological areas (UNESCO, FAO, WMO, ISSS)</p> <p>1980. Report on crop water requirements in irrigated areas (FAO)</p> <p><u>Field studies</u></p> <p>1979. Report on soil conservation and shifting cultivation in Francophone countries of Africa (FAO)</p> <p>1979. Report on soil conservation and shifting cultivation in Asia (1979) (FAO)</p> <p><u>Training</u></p> <p>Continuing. Training courses for agricultural extension services (FAO)</p> <p>Continuing. Training courses on soil degradation and soil conservation (UNESCO)</p> <p>1979. Land reclamation of alkaline soils (UNEP, Government of Hungary)</p> <p>1979. Sand dune fixation and means of arresting soil erosion; draft guidelines on sand dune fixation (UNEP, Government of USSR) (Goal 7)</p> <p>1979. Reclamation of saline irrigated soils (UNEP, Government of USSR)</p> <p>1979. Land reclamation in areas affected by salinization and water logging (FAO, UNEP, Government of Egypt)</p> <p>1980. Land reclamation after mining; draft guidelines completed (UNEP, Government of Poland) (Goal 7)</p> <p>1980. Advice and assistance to countries affected by soil degradation in the formulation of soil policies through regional and sub-regional seminars for government experts (FAO, UNESCO, WMO, UNEP)</p> <p>1980. Framework of methodology for the assessment of soil degradation approved by Governments after large-scale field testing (FAO, UNEP, UNESCO)</p>

Objectives	Activities
	<p>1981. Guidelines for the development and application of local or traditional methods of improving soil fertility (FAO)</p> <p>1981. Guidelines for developing policies and programmes for soil conservation (FAO)</p> <p>1981. Progress report on action programme for application of integrated soil management; draft guidelines on soil erosion completed (FAO, UNEP)</p> <p>1980. Technical note on meteorological aspects of land use under severe climatic conditions (WMO, FAO)</p> <p>1982. <u>Guidelines on:</u> sand dune fixation; soil erosion in tropical countries; land reclamation after mining (FAO, UNEP, USSR, government of Poland)</p>

(f) Budgetary Implications

Organizations	(Thousands of \$)				
	1977	1978	1979	1980	1981
UNESCO	500.0	500.0	600.0	600.0	600.0
ICRISAT	-	-	4,000.0	4,000.0	4,000.0
UNEP	1,345.0	1,133.0	1,400.0 <u>a/</u>	900.0 <u>a/</u>	810.0 <u>a/</u>
Total:	1,845.0	1,633.0	6,000.0	5,500.0	5,410.0

a/ Planned.

5. Water
(budget sub-line 1107)

(a) Problem addressed

85. Environmental problems associated with water resources development have been aggravated in recent years because of increased demand on a resource of fixed quantity and one which is subjected to widespread deterioration in quality as a result of man's activities. The United Nations Water Conference stressed the importance of water to human health and well-being, and recognized the consequences of various water uses for environmental quality and the environmental problems related to community water supply and water use for agriculture, industry, hydropower generation and navigation. The main thrust of the water component of the environment programme relates to environmental aspects of water issues and has as its general objective the stimulation of co-operative and joint efforts to introduce environmental considerations as to ensure the maintenance of satisfactory quality and quantity of water.

(b) Authority

86. The objectives, strategies and 1982 goals for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 16-17 and 21.

(c) Progress report

87. The following developments have taken place since the Governing Council's sixth session:

(a) Inter-agency consultations have been undertaken in order to formulate proposals in respect of steps required to enable the Economic and Social Council, the Committee on Natural Resources and the regional commissions to play a central role in the promotion of intergovernmental co-operation and to further develop the administrative and financial aspects of co-ordination at the intersecretariat level;

(b) Regional programmes for the implementation of the Mar-del-Plata Action Plan on integrated development and management of water resources have been developed in Africa, Latin America, and West Asia in 1978, and reports prepared for submission to the Committee on Natural Resources at its third special session (ECA, ECE, ECLA, ESCAP, ECWA, UNEP, Governments);

(c) The tenth session of the ECE Committee on Water Problems adopted a revised programme of work 1979-1983, taking into account the recommendations and resolutions of the United Nations Water Conference ;

(d) Evaluation of projects with ECLA 22/ and ESCAP (the Mekong Committee) 23/ has indicated that the results of those projects have improved environmentally sound approaches and techniques in water resources management (ECLA, UNDP, ESCAP, UNEP);

22/ FP/1107-75-01 (377).

23/ FP/1000-74-04.

(e) During 1977-1978 rapid assessments of the state of preparations for the International Drinking Water Supply and Sanitation Decade 24/ were undertaken in more than 100 developing countries (WHO, World Bank);

(f) A study on drinking water supply and sanitation has been prepared for the submission to the 1979 session of the WHO/UNICEF Joint Committee on Health Policy (WHO, UNICEF);

(g) An inter-agency agreement was reached for co-ordinating action at the country level during the Decade with UNDP resident representatives as the focal points;

(d) Urgent needs

88. The urgent needs in relation to water are for:

(a) Improved knowledge of the environmental impact of large river-basin development projects;

(b) Identification of co-operative arrangements for integration of environmental considerations into water resources development, and for information exchange on environmental issues in water resources management.

(e) Work plan

Objectives	Activities
<p><u>Goal 7 for 1982</u></p> <p>"... a world-wide system of pilot and demonstration projects in the rational management of water resources"</p> <p>(relevant to activities under objectives (i) and (iii))</p> <p>(i) To develop and promote the application of integrated management techniques for the conservation and utilization of water resources in harmony with other natural resources</p>	<p>1982. Establishment of demonstration projects aimed at a better understanding of integrated management of water resources in the ECA, ECWA and ESCAP regions: environmental and health aspects of irrigation (WHO, UNEP); environmental safety in lake and river basin development (UNDP, regional commissions, UNEP)</p> <p>1982. Methodologies established for rational and integrated management for ground water use and conservation (UNEP, UNESCO)</p> <p>1980-1983. IHP Phases I and II completed (UNESCO, Governments)</p>

Objectives	Activities
(ii) To promote the development of co-operative and co-ordinated management techniques for water resources	<p>1980. Water quality and environmental impact model for the Upper Nile basin <u>a/</u> (UNDP, WHO, UNEP)</p> <p>1981. Arrangements for co-operation and co-ordination identified (United Nations, UNEP, Governments)</p> <p>1982. Recommendations and guidelines on environmentally sound management of water projects: large dams (UNESCO, UNEP)</p> <p>1982. Compendium of techniques for environmentally sound irrigation management (UNDP, FAO)</p>
(iii) To promote the development and application of integrated water supply and sanitation techniques for rural and urban poor populations	<p>1982. Establishment of a limited number of projects to demonstrate: integrated water supply (UNICEF, WHO); rain and storm water harvesting (UNEP, UNICEF, regional commissions, Governments); environmental protection of small impoundments (WHO, UNESCO, UNEP) <u>b/</u></p>
(iv) To support efforts to ensure the provision of safe water supplies to all people by 1990	<p>By 1983 most countries will have strengthened or expanded their capabilities to formulate and initiate the implementation of national plans for the extension of water supply and sanitation services, particularly in rural and underserved urban areas, in keeping with the goals initiated in the Mar-del-Plata Action Plan for the International Drinking Water Supply and Sanitation Decade, 1981-1990 (WHO, other United Nations agencies, Governments)</p>
(v) To promote the development and application of methods for assessment of water quality and for arresting and correcting unsatisfactory conditions	<p>1980. Use of international network of research and development centres for rural water quality monitoring and for training and information exchange in environmental matters related to water management (WHO, UNEP)</p>
(vi) To promote the development of training, education and public information programmes in the field of water resources management	<p>1982. Additional strategies for rational water use and management in rural areas (UNEP, Governments)</p> <p>1980. Completion of phase I <u>c/</u> of the training programme on water resources management (UNEP, Governments)</p> <p>1979. Initiation of a training programme on environmental aspects of river basin management (UNEP, Governments)</p> <p>1979. Training courses on eutrophication <u>d/</u> (UNEP, Governments)</p>

a/ FP/1107-77-06; UNEP/FUND/PROJECTS/A.59.

b/ FP/1107-77-04; FP/1107-77-05; FP/1107-77-07 and FP/1107-78-02; see UNEP/FUND/PROJECTS/A.57; A.58, A.60 and A.127 respectively.

c/ FP/1107-77-01; UNEP/FUND/PROJECTS/A.75.

d/ FP/1107-78-01; UNEP/FUND/PROJECTS/A.147.

(f) Budgetary implications

Organization	(Thousands of \$)				
	1977	1978	1979	1980	1981
IESA (CNRET) <u>a/</u>	11,329.0	17-20,000.0	-	-	-
ESCAP	-	840.0	-	335.0	-
ECLA	-	420.0	-	-	-
ECWA	-	333.9	166.9	195.9	217.5
WHO	21,340.0	-	130.0	130.0	130.0
UNESCO	2,270.0	1,300.0	1,359.0	1,000.0	-
UNEP	1,300.0	1,027.0	1,200.0 <u>b/</u>	1,600.0 <u>b/</u>	1,550.0 <u>a/</u>
Total:	36,239.0	23,920.9	2,855.9	3,260.9	1,897.5

a/ Estimate of United Nations executed UNDP projects.

b/ Planned.

6. Genetic resources
(budget sub-line 1108)

(a) Problem addressed

89. Economic exploitation of plants and animals can endanger, through narrow selection and breeding, the existence of certain genetic traits that may have an unforeseen value, and on which the future evolution of economically useful breeds depends. Conservation of indigenous varieties and breeds is hence essential for future utilization. Micro-organisms play a fundamental role in balancing the environment in nature and the potential for use of specific strains in management of the environment - by man - is inadequately tapped, especially in developing countries. Such strains, along with appropriate application technologies for their utilization, need to be made available through conservation in specialized culture collections.

(b) Authority

90. The objectives, strategies and 1982 goal for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 18 and 21.

(c) Progress report

91. The following progress has been achieved since the Governing Council's sixth session:

(a) The four pilot microbiological resources centres (MIRCENS) 25/ for conservation of microbial culture collections and their utilization in environmental management have started establishing regional networks by affiliating laboratories and cataloguing culture collections in Nairobi (biological nitrogen fixation), Cairo (biotechnology), Bangkok (waste recycling and biogas) and Porto Alegre (biological nitrogen fixation) (UNESCO, UNEP, Governments);

(b) The World Data Centre on micro-organisms (WDC) (UNESCO, UNEP, Australia) 25/ at the University of Queensland, Australia, which computerizes data on microbial strains and provides information upon request, now covers approximately 8,000 additional microbial cultures, including 283 Rhizobium strains, and seven additional culture collections (from Korea, Mexico, Philippines, Sudan and the United States of America). It has produced catalogues for four additional culture collections, including one for Rhizobium strains at the University of Hawaii, and one for the ASEAN countries. An updated edition of the "World Directory of Collections of Cultures of Micro-organisms", first published in 1972, is ready for publication. In September 1978 WDC started monitoring threats to culture collections and assisting - in co-operation with WFCC - in relocation of threatened collections;

(c) The Karolinska Institute "Supporting MIRCEN" 25/ published a report on the potential of rural biological recycling systems as a commissioned study for the International Federation of Institutes for Advanced Study (IFIAS);

(d) The UNEP/UNESCO/ICRO Panel on Microbiology continued to give guidance to the programme on microbial genetic resources, and has produced a digest on "Micro-organisms and Man" and a case study in transfer of science and technology for submission to the Conference on Science and Technology for Development, based on the MIRCEN programme (UNESCO, UNEP, ICRO, ICSU);

(e) The annual year-long course on applied microbiology was held at Osaka, Japan for scientists from developing countries. In addition, short training courses on environmental applications of micro-organisms 25/ were held at Kuala Lumpur (May 1978), Seoul (July 1978), Jerusalem (September 1978), Mexico City (October 1978), Kumasi (August/September 1978), Lagos (October 1978), and Bandung (January 1979) (UNESCO, UNEP, ICRO, FAO, Governments and several NGOs);

(f) The UNEP-supported research programme on biological nitrogen fixation in the tropics at IITA 26/ has attracted major support from UNDP, which is now extending the programme to ICRISAT and ICARDA;

(g) Field trials on nitrogen fixation have started in five African countries as part of an international programme 27/ (FAO, UNEP, Governments);

(h) A report on "Declining Breeds of Mediterranean Sheep" has been published 28/ (February 1979) (FAO, UNEP);

(i) A meeting on conservation and utilization of animal genetic resources in Latin America, 28/ held at Bogota, Colombia in November 1978, concluded, inter alia, that Criollo cattle and small ruminants including indigenous Camelidae species show potential superiority over exotic breeds in local environments and are especially relevant to extensive rearing and to subsistence agriculture, recommended that Governments establish programmes for conservation and evaluation, and proposed a regional programme to co-ordinate activities on animal genetic resources (FAO, UNEP, Government of Colombia);

(j) Two issues of Forest Genetic Resources Information (FAO), the Spanish version of "Methodology of Conservation of Forest Genetic Resources" (FAO, UNEP), 43 ex situ conservation stands for certain pines and eucalyptus have been maintained in six countries (FAO, UNEP, IUFRO, Governments) 28a/ and 57 data sheets on forest tree and palm species either endangered or undergoing genetic impoverishment have been published (IUFRO, IUCN);

(k) The annual year-long training course in conservation of crop genetic resources 29/ was held at the University of Birmingham, United Kingdom of Great Britain and Northern Ireland, with 16 scientists from 12 developing countries receiving fellowships (UNEP, IBPGR, FAO, Government of the United Kingdom);

(l) Two new regional genetic resources centres for crop plants at Turrialba (Costa Rica) and Addis Ababa (Ethiopia) became fully operational. (IBPGR, Governments of Costa Rica, Ethiopia and Germany, Federal Republic of);

26/ FP/1108-75-06; Report to Governments, No. 3.

27/ FP/1108-75-07.

28/ FP/1108-76-02; UNEP/FUND/PROJECTS/A.15.

28a/ FP/1108-75-05; Report to Governments, No. 4.

29/ FP/0604-73-04; FP/1108-75-04; Report to Governments, No. 4;
 FP/1108-76-01; UNEP/FUND/PROJECTS/A.14;
 FP/1108-78-02; UNEP/FUND/PROJECTS/A.148.

(m) Three explorations, collection and storage expeditions for sorghum and millet genetic material were concluded in Kenya and the United Republic of Tanzania 29/ (IBPGR, CGIAR, UNEP, Governments);

(n) Two issues of the Plant Genetic Resources Newsletter were published (IBPGR, FAO);

(o) Conservation facilities for rice genetic material at the International Rice Research Institute became operational December 1978 (CGIAR, World Bank, UNDP, Governments). Field collections and storage were carried out in Bangladesh, Indonesia, the Philippines and Sri Lanka, while approximately 25,000 samples of materials were distributed and trials/selections were concluded for rice germplasm with disease resistance, low fertilizer requirements and environmental tolerance characteristics 30/ (IRRI, UNEP, Governments);

(p) An Expert Consultation on Genetic Monitoring held in Moscow 31/ (4-6 September 1978) recommended that high interest continue to be taken in measures to protect human populations from environmental mutagens (WHO, UNEP, Government of the USSR), and urged WHO to intensify the use of cytogenetic methods for the detection of environmental effects and establish close links with institutions and laboratories engaged in the assessment of mutagenicity and in genetic monitoring of human populations.

(d) Urgent needs

92. The urgent needs in relation to genetic resources are for:

(a) Establishment of a self-supporting mechanism for production and regular updating of specialized catalogues of important microbiological strains in order to make information readily available to users;

(b) Establishment of a workable plan for encouraging of in situ conservation measures for forest genetic resources;

(c) Intensification of research into the methodology of long-term conservation of animal and fish genetic resources.

(e) Work plan

Objectives	Activities
<p>(i) To search for knowledge about threatened species and to evolve a strategy to conserve plants and animals, and preserve germplasm</p> <p>(Activities relating to micro-organisms are listed under objective (ii) below)</p>	<p><u>Crop plant genetic resources</u></p> <p>Annual. Exploration/collection expeditions for selected crop genetic material in specified regions according to the IBPGR-approved priority list. (IBPGR, UNEP, Governments, FAO, CGIAR)</p> <p>Annual. Annual training course in conservation of crop genetic resources at the University of Birmingham (IBPGR, Government of the United Kingdom, FAO, UNEP)</p> <p>1980. Expert consultation on Conservation of medicinal plants germplasm</p>

29/ FP/0604-73-04; FP/1108-75-04; Report to Governments No. 4;
FP/1108-76-01; UNEP/FUND/PROJECTS/A.14; FP/1108-78-02; UNEP/FUND/PROJECTS/A.148.

30/ FP/1108-76-03.

31/ FP/1108-78-01; UNEP/FUND/PROJECTS/A.94.

Objectives	Activities
<p>(ii) To undertake studies on micro-organisms which could enable man to use them in efficient and novel ways for his betterment and for the enhancement of the environment</p>	<p><u>Forest genetic resources</u></p> <p>1979/1980. Examination of the results of reconnaissance surveys for ecological and genetic variation within <u>Eucalyptus</u>, <u>Acacia</u> and <u>Prosopis</u> species and preparation of a conservation programme in Africa, South East Asia and Latin America (IBPGR, UNEP, Governments)</p> <p>1980. 43 <u>ex situ</u> conservation stands for selected pines and eucalyptus approach maturity (FAO, UNEP, Governments)</p> <p>1980. Possible agreement between e.g. FAO, IUFRO, UNESCO, IUCN, ICRAF and UNEP on the action plan for <u>in situ</u> conservation of threatened forest genetic resources</p> <p><u>Animal and fish genetic resources</u></p> <p>1979. Report on the status of trypanotolerant cattle breeds of Africa (FAO, UNEP, ILCA)</p> <p>1979. Report of the expert consultation on animal genetic resources in Latin America and proposal for conservation of Criollo cattle and <u>Camelidae</u> species (FAO, UNEP)</p> <p>1979. Report on the status of prolific sheep breeds in tropical and sub-tropical regions (FAO, UNEP)</p> <p>1979. Report on the status of rare breeds of domesticated animals in parks and zoos (FAO, UNEP)</p> <p>1980. Convening a global consultation on conservation of animal genetic resources, based on the surveys concluded in the first phase and recommending action for the second phase (FAO, UNEP)</p> <p>1980. Recommendations for a plan of action to conserve fish genetic resources (FAO, UNEP)</p> <p>1981/1982. Report on the methodology for long-term conservation of animal genetic resources (FAO, UNEP)</p> <p>1979. Pilot networks for four regional MIRCENS established with approximately 15 laboratories participating and co-ordination with the activities of the UNU programme on Bioconversion of Organic Residues for Rural Communities and the IFIAS programme on Self-Reliant Rural Development (UNESCO, ICRO, WFCC, UNU, IFIAS, Governments, UNEP)</p>

Objectives	Activities
<p><u>Goal 8 for 1982</u></p> <p>"A global network of micro-biology resources centres to conserve micro-biological resources and apply them in environmental management"</p>	<p>1979. Report on the potential of nitrogen fixation in the tropics and extension of the research programme into arid and semi-arid regions (IITA, UNEP)</p> <p>1979. Expert consultation on a micro-biological contribution to desertification control</p> <p>1980. MIRCENS' conservation role established with networks involving approximately 20 laboratories and production of specialized catalogues for Rhizobium, fermented foods and catalogues for South East Asia (UNESCO, UNEP, ICRO, WFCC, Governments)</p> <p>1980. Formulation of an international programme on biological nitrogen fixation for developing countries (FAO, UNEP, MIRCENS, UNESCO, ICRO, Governments)</p> <p>1980. Sixth Conference on Global Impact of Applied Microbiology and fourth International Conference of Culture Collections (UNESCO, UNEP, ICRO, Government of Nigeria, NGOs)</p> <p>1980. UNEP/UNESCO/ICRO Panel on Microbiology to hold meeting and produce a report on the impact of MIRCENS on environmental betterment (UNESCO, UNEP, ICRO)</p> <p>1981. Consultation on the potential of micro-organisms in degradation of recalcitrant pollutants</p> <p>1982. Regional pilot MIRCENS' networks operational</p> <p>Annual. Short training courses on environmental applications of micro-organisms in conjunction with the MIRCEN networks (UNESCO, UNEP, ICRO, MIRCENS, Governments, NGOs)</p>

(f) Budgetary implications

Organizations and Governments	(Thousands of \$)				
	1977	1978	1979	1980	1981
FAO	81.9	81.9	81.9	24.0	-
UNESCO	75.0	75.0	75.0	-	-
IITA	84.0	62.0	62.0	15.7	-
IBPGR	1,056.0	-	-	-	-
IRRI	4,814.6	4,814.6	-	-	-
USSR Government	-	40.0	-	-	-
Various institutes of many countries listed in project document Rev.3	78.4	78.4	-	-	-
Other developing countries and Research institutes not specified in project document	83.5	83.5	83.5	-	-
UNEP	806.2	953.0	1,250.0 ^{a/}	1,000 <u>a/</u>	900.0
Total:	7,079.6	6,188.4	1,552.4	1,039.7	900.0

a/ Planned.

7. Wildlife and protected areas
(budget sub-line 1110)

(a) Problem addressed

93. Many wildlife species of animals and plants still provide man with abundant renewable supplies of proteins, hides and skins, fibre and drugs. However, wildlife species and their habitats are subjected to a continuous competition with man. The increasing rate of destruction and the growing use of toxic chemicals indicate that more effective measures for the management of wildlife species and of their habitats are needed in order to reverse the present trend, where the disappearance of species seems to exceed the rate of speciation. Man's benefits from wildlife, in economic as well as scientific, educational recreational and cultural terms, will suffer unless ecologically sound national legislation and regional and international conventions for the conservation of wildlife resources are formulated and effectively implemented, and decision-makers as well as the general public sensitized to the values of wildlife and to the need to integrate conservation programmes into socio-economic development schemes.

(b) Authority

94. The objectives, strategies and 1982 goal for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 18-21.

(c) Progress report

95. The following developments have occurred since the Governing Council's sixth session:

(a) A third draft of a world conservation strategy, featuring principles of conservation and analyses of factors for determining priorities, and a sourcebook on application of such principles to biomes, ecosystems and species, were prepared and reviewed under the UNEP-IUCN global conservation project 32/ (UNEP, IUCN);

(b) Under the same global conservation project 32/ a survey of tropical rain forests was undertaken (UNEP, IUCN). It identified the variation of tropical rain forest types in relation to the distribution of existing and planned protected areas and made recommendations for additional areas to be protected. Another field survey under the same project on the status of wildlife conservation was undertaken in southern Latin America;

(c) Surveys of existing national parks and other protected areas were completed 33/ for West and Central Africa covering 22 countries (UNEP, IUCN). The results indicate that additional measures to increase the size, representativity and protection of parks are desirable, and proposals for action will be published in 1979;

32/ FP/1103-75-04 and FP/1110-79-01.

33/ FP/0603-73-02

(d) As of June 1978, 144 biosphere reserves had been designated on a global scale (Governments, UNESCO), of which 18 are in South-east Asia and Australia (Governments, UNEP, UNESCO); 34/

(e) Under the UNEP-IUCN global conservation project 32/ additional information on endangered species, national parks and other protected areas and landscapes was published in a number of directories including the Red Data Book, the World Directory of National Parks and Other Protected Areas, which now covers 60 countries and 560 areas and the Green Book of Outstanding Landscapes (preliminary edition) which covers some 40 diverse landscapes in nine different countries; a directory of Biosphere Reserves is being published by UNESCO;

(f) By October 1978, 22 Parties to the Convention on Wetlands of International Importance Especially as Habitat Waterfowl had designated 177 areas comprising 56.000 km² (Governments, UNESCO, IWRB, IUCN, UNEP); 35/

(g) A Study Tour on National Parks and Nature Reserves, 36/ conducted in the USSR in September - October 1978 (UNEP, Government of USSR), was attended by 16 participants from 16 developing countries, and was followed by a press briefing seminar for 20 journalists on the world conservation strategy (UNEP, Earthscan);

(h) A fellowship programme on wildlife and national parks management in English-speaking Africa has so far contributed to the participation of 81 students from ten countries to be trained at Mweka College, United Republic of Tanzania 37/ (UNEP). Three issues of the Tiger Paper, a quarterly news bulletin dedicated to the exchange of information relating to wildlife and national parks management for the Asia-Pacific region, have been published 38/ (UNEP, FAO);

(i) A public awareness film about the ecological functioning of the tropical forest ecosystem in Gulung Mulu National Park in Sarawak was prepared 39/ (UNEP, BBC-Vision International).

(d) Urgent needs

96. The urgent needs in relation to wildlife and protected areas are for:

(a) Promotion of conservation education and training programmes in developing countries;

(b) Effective implementation of national, regional and international measures for managing wildlife resources and their habitats including strict enforcement of relevant legislation;

(c) Consolidation and improvement of a global network of protected areas and biosphere reserves representative of the earth's diversified ecosystems.

34/ FP/1103-75-05.

35/ Also relevant to Environmental law.

36/ FP/1103-78-02; UNEP/FUND/PROJECTS/A.91.

37/ FP/1103-77-01; UNEP/FUND/PROJECTS/A.33.

38/ FP/1104-75-02; UNEP/FUND/PROJECTS/A.34.

39/ FP/1102-78-02; UNEP/FUND/PROJECTS/A.126.

(e) Work plan

Objectives	Activities
<p><u>Goal 9 for 1982</u></p> <p>Development of a global plan for the restoration, conservation and management of wildlife, and the establishment and management of a network of parks and other protected areas</p> <p>(i) To identify, restore and conserve terrestrial and aquatic ecosystems of great biological and ecological significance as well as natural and cultural areas which constitute the heritage of all mankind</p> <p>(ii) To identify representative samples of terrestrial and aquatic ecosystems and investigate the impacts of human activities on them. These protected areas would be used as far as possible for research, training and permanent monitoring of natural resources</p>	<p>1979. Publication of a world conservation strategy and accompanying sourcebook for decision-makers and for the public (UNEP, IUCN)</p> <p>1979-1980. Promotion, consolidation and improvement of a global network of terrestrial and marine protected areas including the Mediterranean, Caribbean, Northern Indian Ocean, Red Sea and South Pacific</p> <p>1979-1981. On the basis of surveys, biosphere reserves in arid and semi-arid lands will be established (UNEP, UNESCO)</p> <p>1979-1981. On the basis of surveys of wildlands in Latin America, national and regional wildlife conservation programmes will be established (UNEP, FAO)</p> <p>1980-1981. Establishment of a pilot project in West Africa for wildlife restoration and conservation programmes (UNEP, International Foundation for Game Conservation, FAO)</p> <p>1979-1982. Formulation of a master plan for the Gobi National Park including training, education and information (UNEP, Governments of Mongolia, USSR)</p> <p>1979. Study tours on national parks and nature reserves in the USSR (FAO, UNEP, Governments of USSR)</p> <p>1979. Training and conservation education programme for French-speaking countries in Africa at Garoua (UNEP, Garoua School, United Republic of Cameroon). Initiation of similar activities in other developing regions in Latin America and Asia (UNEP, Governments)</p>

Objectives	Activities
<p>(iii) To help ensure conservation and management measures for endangered species</p>	<p>1979. Continuing training and conservation education programmes in wildlife and national park management (FAO, UNEP, Governments)</p> <p>1979-1981. Training and conservation education programmes for English-speaking countries in Africa at Mweka College <u>a/</u></p> <p>1980-1981. A scientific workshop to provide guidelines for wildlife economics (UNEP, USSR)</p> <p>Annually. Co-ordination and programming of selected conservation activities through the Ecosystem Conservation Group (ECG) (UNEP, FAO, UNESCO, IUCN)</p> <p>1979. Adoption of a Convention on the Conservation of Migratory Species of Wild Animals by a plenipotentiary conference in Bonn (Governments)</p> <p>1979. Promotion of the Convention for nature conservation in the South Pacific (Governments, SPC, UNEP, IUCN)</p> <p>1979. Promotion of the draft Convention on the Conservation of Wildlife and Natural Habitats (Governments, Council of Europe)</p> <p>1979-1980. Revision of the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (Governments, OAS)</p> <p>1979-1980. Publication of:</p> <p>(a) World Directory of National Parks and other Protected Areas (Vol. III)</p> <p>(b) United Nations List of National Parks and Equivalent Reserves (Rev.)</p> <p>(c) Directory of Wetlands of International Importance</p> <p>(d) Red Data Book on Animals (partial revision annually)</p> <p>(e) Plant Red Data Book</p> <p>(f) Annotated List of vulnerable or endangered species (cross referenced to national lists and international agreements)</p>

a/ FP/1130-77-01; UNEP/FUND/PROJECTS/A.33.

Objectives	Activities
	<p>(g) Identification of species conservation needs</p> <p>(h) Regional and national conservation plans</p> <p>1979-1980. Publication and distribution of Tiger Paper in the Asia-Pacific region; initiation of similar activities in other developing regions in Africa and Latin America, Parks magazine (UNEP, FAO, IUCN) <u>b/</u></p> <p>1979-1982;</p> <p>(a) Monitor implementation of the Conservation on international Trade in Endangered Species of Wild Fauna and Flora</p> <p>(b) Collection of wildlife trade statistics</p> <p>(c) Preparation and publication of identification manual</p> <p>(d) Promotion of an operational international network of national management authorities</p> <p>(e) Preparation of a directory of competent national authorities (UNEP, IUCN)</p>

b/ FP/1103-75-02; UNEP/FUND/PROJECTS/A.39.

(f) Budgetary implications

Organizations and Governments	(Thousands of \$)				
	1977	1978	1979	1980	1981
FAO	23.8	23.0	24.0	24.0	-
UNESCO	14.0	1.0	-	-	-
IUCN	510.6	1,460.0	-	-	-
CAWM	284.1	304.7	350.0	-	-
Mongolian Government	-	-	575.0	575.0	575.0
USSR Government	-	75.0	-	-	-
UNEP	709.5	1,232.0	2,100.0 ^{a/}	1,740.0 ^{a/}	1,740.0 ^{a/}
Total:	1,542.0	3,095.7	3,049.0	2,339.0	2,315.0

^{a/} Planned.

C. ENVIRONMENT AND DEVELOPMENT
(budget line 04)

1. Integrated approach to environment and development, including ecodevelopment

2. Use of natural resources^{40/}
(budget sub-lines 0404/0406/0407)

(a) Problem addressed

97. Environment and development is not typical of the subject areas of the environment programme, in that it represents an integrative category, and as such cannot be sharply defined. Its scope ranges from the individual to the global community of nations, and it subsumes topics of widely differing time perspective, ranging from immediate and operational projects to questions having to do with long-term planning and strategies, as well as philosophical or conceptual issues such as the quality of life and the nature of development. Environmentally sound and sustainable development requires that the environmental considerations and goals be fully integrated in the development process. The breadth of the subject calls into play many actors, including Governments and the United Nations system, and neither programme documentation nor information on budgets and expenditures lend themselves easily to meaningful analysis of each organization's activities.

98. The present section, therefore, is primarily analytical and policy-oriented. It presents a summary assessment of the situation, in terms both of progress made and of obstacles encountered in achieving an integrated approach to environment and development and working towards environmentally sound patterns of development.

(b) Authority

99. The objectives, strategies and the 1982 goals for these components of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 21-24, 27-28 and 39-40.

(c) Assessment of the situation

(i) Opportunities and achievements

100. The perspective on environment-development relationships formulated at the Stockholm Conference, and refined and expanded in the ensuing period, has helped bridge the gap in attitudes to the environment between the developed and the developing countries, contributed to and enriched the process of rethinking the present modes of development, and engendered new and different expectations for

^{40/} This priority area focuses mainly on rational and non-wasteful uses of natural resources, which in itself is one of the key components of the integrated approach to environment and development. For the purposes of this chapter, they are treated together. See also UNEP Report No. 1 (1979).

the future. An overall environmentally sound development perspective therefore seems to be making some headway against the established more fragmented and functionally autonomous approaches. New "environments" have been discovered in addition to pollution, which in some countries represent matters of immediate survival (e.g. pressures on land, exhaustion of forests, soil erosion, soil fertility, depletion of water, etc.). The emphasis is gradually shifting to environmentally sound practice, as a dynamic process, and away from the exclusive concern with environmental impact assessment, which was usually seen and implemented as an "add-on", frequently with static implications.

101. Governments, international organizations, and public opinion are showing an increasing commitment to seeking alternative patterns of development and lifestyles as a way of attaining key development goals, including those of sustainability and of a healthy environment, and of avoiding some serious environmental problems in the future. A growing recognition of the need to develop practical and institutional approaches which would make it easier to translate the goals of environmentally sound development into concrete action has emerged. Accordingly, some Governments are beginning to work on methods for accurate assessment of the economic, financial and social effects and repercussions of measures to improve the environment, and for incorporating environmental concerns in a comprehensive manner into the general framework of socio-economic planning and management, with the result that environmentally sound development goals are beginning to be reflected in long-term strategic policy objectives. It is realized that considerable effort, trial and error, and learning are necessary, on the part of all concerned, to institutionalize optimal approaches and to arrive at desired outcomes. The key role of a well-informed and participating citizenry in decision-making is recognized, both as a source of ideas, approaches, and direct contributions, and as a positive political force.

(ii) Some constraints

102. Although awareness of environmental problems is on the increase among Governments, it is generally not reflected in effective integration of environmental considerations into development planning. National environmental agencies or bodies are sometimes established, but they have little leverage or influence on development plans. Often, lack of substantive information on environmental impacts among those responsible for development planning, and the unavailability of tested tools and methodologies, accentuate the problem. In a large number of countries, traditional institutional structures are still ill-adapted to the nature of most environmental problems, which require truly integrated approaches. Environmental goals are often perceived too narrowly (e.g. pollution control), and are either assigned low priority, or seen as possibly hampering the achievement of other more pressing societal goals by absorbing the limited financial resources available. Although recognized, the benefits of such measures, often diffuse, difficult to quantify and long-term, are frequently neglected, especially when exposed to pressures to meet short-term requirements of various competing needs.

103. Within the United Nations system there has sometime been a feeling that UNEP, as the central environmental body, ought to share the responsibility for incorporating effectively the environmental dimension into the development activities of various organizations. Financial support is often expected from UNEP for this purpose. In virtually the whole of the United Nations system, effective institutional capability is yet to be evolved to deal with environment and development concerns in an integrated manner. Where environmental offices exist, they tend to be more oriented to environment projects or environmental impacts per se than to the integrated approach to environment and development

issues. With a few exceptions, budgets do not provide adequately for attempting to take environmental considerations systematically into account in the formulation and implementation of development projects. Difficulties arise in putting into practice the basic assumption that decisions and recommendations of UNEP's Governing Council, often supported by the General Assembly, are reflected fully and effectively in the work of other United Nations organizations. Unless such recommendations are translated into specific decisions of the governing bodies of these organizations, they are in general little, if at all, implemented. Obviously, the co-ordinating and catalytic impact of UNEP cannot be based simply on legislative authority. Closer and more systematic relations between UNEP and the other members of the system, at the working level, are also required.

(iii) Basic conclusions emerging from the in-depth study

104. To overcome these constraints will be a long and complex process, involving change in perceptions and in institutions, significant departures from ways things have been done in the past, often important conflicts between different interests and groups, etc. Progress may be slow and benefits not readily perceptible.

105. UNEP's impact by necessity is and will continue to be limited. Its role will remain that of promoting awareness and assisting Governments and other actors in identifying underlying causes and reaching the desired outcomes. Appropriate transitional strategies, sometimes spanning generations, will have to be devised both nationally and internationally. What is under way, therefore, is a continuing process, aimed at the policy level and involving education and persuasion, raising consciousness, and marshalling figures and facts in support of the integrated approach to environment and development.

(d) Progress report

106. The following progress has been achieved since the Governing Council's sixth session:

(a) In November 1978, an intergovernmental preparatory meeting defined the scope and content of the UNEP/ECE regional seminar on alternative patterns of development and lifestyles; 41/

(b) A national seminar held in August 1978 drew up a detailed work programme for implementing the first national project on Environment and Development (Kenya/UNEP/UNDP) 42/. The aim of the project is to test, apply, adapt and further develop, in a specific national context, the approach to incorporating the environmental dimension into economic planning;

(c) The book "Adaptive Environmental Assessment and Management" has been published (UNEP-IIASA). 43/ It shows how ecological understanding can be used to improve management and development processes, and emphasizes the need for

41/ FP/0404-78-07; UNEP/FUND/PROJECTS/A.112. For the report of the meeting, see document EC/SEM.11/PM/2. For the background note on the regional seminars submitted by the UNEP secretariat to the intergovernmental preparatory meeting, see document ECE/SEM.11/PM/R.1.

42/ FP/0404-78-01 and FP/0404-78-09; UNEP/FUND/PROJECTS/A.84 and A.138.

43/ FP/0404-75-02.

selectivity and simplification, which permit an economy of approach which is of special importance for developing countries;

(d) A study of how multilateral development assistance institutions take environmental goals into account in their activities has been published under the title "Banking on the Biosphere?" (UNEP, IIED). 44/ A companion study has been initiated on bilateral aid institutions, with six donor countries taking part in the exercise (IIED); 45/

(e) A coordinated exercise consisting of a series of case studies to be carried out by interested Governments has been initiated, in order to help develop methodologies for assessing the benefits accruing from environmental measures and ensuring that they are given sufficient weight in the decision-making process (UNEP);

(f) The first phase 46/ of activities on trade aspects of environmental regulations and policies, including assessment of the implications of trade barriers and other restrictions of particular concern to developing countries which have been or are being introduced in developed countries either on environmental grounds or for the protection of industries when costs increase as a result of environmental measures, has been completed. Two case studies have been published on the impact on foreign trade of environmental control policies, and work on the second phase of the activities 47/ has begun (UNEP, UNCTAD).

(e) Urgent needs

107. The urgent needs in relation to these areas are for:

(a) Co-operation among Governments and the United Nations system in the incorporation of the environmental dimension into the new international development strategy;

(b) Development and synthesis of data and comparable statistics on environmental indicators for use by decision-makers (see also paras. 55-56 above);

(c) Promotion of methodologies for integrating the environmental dimension into the development process, and of their application.

(f) Proposed objectives and strategies

108. As a result of the in-depth review, the Executive Director proposes that the approved objectives and strategies be reformulated as follows:

(a) Objectives

(i) To promote the goals of environmentally sound and sustainable development;

44/ FP/1000-76-01.

45/ FP/0404-78-06; UNEP/FUND/PROJECTS/A.103.

46/ FP/0401-73-02 (previously FP/0406-73-01).

47/ FP/0404-78-03.

- (ii) To promote research on, develop, test, apply and adapt tools and approaches for integrating the environmental dimension into development;

(b) Strategies

- (i) To continue refining and promoting the conceptual framework for environment-development relationships, with special emphasis on demonstrating the advantages of the integrated approach;
- (ii) To identify various constraints and obstacles in mapping approaches and strategies for attainment of the objectives, and to develop means of overcoming them;
- (iii) To concentrate on a limited number of key issues and areas of action in this field which would have direct relevance to the new international economic order and the new International development strategy such as:
 - Studies on trade effects of environmental measures and industry redevelopment;
 - Activities on alternative patterns of development and lifestyles including patterns of production and consumption, natural resource use, as a means to attaining environmentally sound and sustainable development;
 - Costs and benefits of implementing environmentally sound and sustainable development.

(g) Work plan

Objectives	Activities
(i) Promoting the goals of environmentally sound and sustainable development	1979. Expert meeting on population, resources, environment and development (Government of Sweden) 1979. Five regional seminars on alternative patterns of development and lifestyles, for Africa, a/ Europe, b/ Latin America, c/ Asia and the Pacific d/ and West Asia (UNEP, regional commissions, Governments); these will <u>inter alia</u> provide an input to the formulation of the new international development strategy

a/ FP/0404-78-05; UNEP/FUND/PROJECTS/A.102.

b/ FP/0404-78-07; UNEP/FUND/PROJECTS/A.112.

c/ FP/0404-78-10;

d/ FP/0404-78-04; UNEP/FUND/PROJECTS/A.101.

Objectives	Activities
<p>(ii) Promoting integration of environmental goals into the socio-economic decision-making processes</p>	<p>1980. Publication of reports and studies of the seminars (UNEP, regional commissions, Governments)</p> <p>1980. Inter-regional seminar on alternative patterns of development and lifestyles; publication of recommendations and measures of co-operation in the international context, supportive of alternative patterns and lifestyles (UNEP, United Nations, regional commissions, Governments)</p> <p>1978-1980. Preparation of papers and other inputs on the incorporation of the environmental dimension in the new international development strategy (UNEP)</p> <p>December 1979. Completion of the Kenya project on incorporation of environmental considerations into development planning; <u>e/</u> publication of guidelines and methodologies (UNDP, Kenya, UNEP)</p> <p>1978-1980. Initiation of similar projects in the ECLA, ECWA and ESCAP regions (UNEP)</p> <p>1981. Completion of pilot projects on eco-development <u>f/</u> in Colombia and Iran, and initiation of a similar project in Africa (UNEP, Governments); publication of methodologies for application of ecocodevelopment approach (UNEP)</p> <p>December 1979. Publication of a monograph on Ecocodevelopment; Initiation of a series of booklets containing guidelines for ecocodevelopment projects; continued publication of "Ecocodevelopment News" <u>g/</u> (UNEP, CIRED)</p> <p>1979. Meeting on integration of environmental concerns into multilateral and bilateral development assistance projects and activities, <u>h/</u> in response to Governing Council decision 6/6 (UNEP, UNDP, World Bank)</p>

e/ FP/0404-78-09; UNEP/FUND/PROJECTS/A.138.

f/ FP/0404-78-02 (Colombia); UNEP/FUND/PROJECTS/A.123;
FP/0404-78-08 (Iran); UNEP/FUND/PROJECTS/A.104.

g/ FP/0404-78-11; UNEP/FUND/PROJECTS/A.139.

h/ FP/0404-78-05; UNEP/FUND/PROJECTS/A.103.

Objectives	Activities
	<p><u>Methodological and other studies</u></p> <p>1979. Inter-regional meetings of decision-makers and planners on social and economic evaluation of environmental impacts (UNEP, Governments)</p> <p>1979. Publication of a monograph based on the study by the Institute of Development Studies, Sussex <u>i/</u> (UNEP, Institute)</p> <p>1979. Publication of a monograph on adaptive impact assessment (UNEP, IIASA) <u>j/</u></p> <p>1979. Report on social perceptions (UNEP, UNRISD) <u>k/</u></p> <p>1979. Issue of recommendations for policy makers, of a manual for planning officials and of studies and monographs for specialists and the general public, on specific aspects of the relationship between environmental issues and development planning (UNCTAD, UNEP) <u>l/</u></p> <p>1979. Study on the use of soil and water resources in food production (UNEP, IIASA)</p> <p>1980-1981. Country case studies and sectoral inventory of environment-related trade barriers, feasibility study of a global early warning system, impact assessment, for consideration by appropriate intergovernmental bodies and national authorities <u>m/</u> (UNCTAD, UNEP, FAO, UNIDO, WHO)</p> <p>1980. Publication of methodologies for comprehensive assessment of benefits accruing from environmental measures and programmes (UNEP, Governments)</p>

i/ FP/0404-76-01; UNEP/FUND/PROJECTS/P.20 and Report to Governments, No. 6.

j/ FP/0404-75-02.

k/ FP/0406-76-02; Report to Governments, No. 6.

l/ FP/0401-74-05 (previously FP/0406-74-03) and FP/0405-74-04.

m/ FP/0404-78-03; UNEP/FUND/PROJECTS/A.137.

(h) Budgetary implications a/

Organization	(Thousands of \$)				
	1977	1978	1979	1980	1981
UNEP	1,120.0	743.0	1,730.0 ^{b/}	1,030.0 ^{b/}	930.0 ^{b/}
Total:	1,120.0	743.0	1,730.0	1,030.0	930.0

a/ Lack of clearly defined 'boundaries' in the area of integrated approach to environment and development and use of natural resources, makes it very difficult to extract and assess meaningful budgetary data.

b/ Planned.

3. Environmentally sound and appropriate technology 48/
(budget sub-line 0402)

(a) Problem addressed

109. Technology is crucial in determining man's impact on and interaction with the environment. It is also a crucial factor in man's efforts to achieve socio-economic development. Its ecological soundness and socio-economic appropriateness is a condition sine qua non for the prevention of environmental deterioration, the improvement of the environment and the achievement of sustainable development in both developing and developed countries.

(b) Authority

110. The objectives, strategies and 1982 goals for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 24-27.

(c) Progress report

111. The following developments have occurred since the Governing Council's sixth session:

(a) A planning meeting of directors of institutions involved in the project on management of water hyacinth - one of those in the network of institutions of environmentally sound and appropriate technology - held at New Delhi from 15 to 18 November 1978 agreed on a complete programme including eight institutions in developing countries and the Commonwealth Science Council Secretariat;

^{48/} This section is closely related to integrated approach to environment and development use of natural resources, industry and the environment, human settlements and energy. Since most agencies treat this subject as an integral part of their respective programmes, it does not easily lend itself to precise treatment of their activities in the "progress report" and the "workplan". Consequently only selected examples are presented.

(b) A seminar on environmentally sound and appropriate technologies for food and housing, held in Mexico from 4 to 12 December 1978, agreed that a systematic approach should be used in the process of selection of technology. The proceedings of the seminar were published in the series Cuadernos del CIFCA (UNEP, CIFCA, Colegio de Mexico, CEESTEM);

(c) Decisions were taken to establish African and Arab regional centres for the development, adaptation and transfer of technology (ECA, ECWA, UNCTAD, ILO, UNDP, UNIDO, UNESCO, FAO);

(d) A Regional Centre for Technology Transfer (RCTT) has been established in Bangalore, India (ESCAP, UNDP, UNIDO, UNCTAD and FAO), and its programme has been approved;

(e) A major project has been initiated for the compilation of the state of the art for the selection of appropriate building technologies (UNCHS);

(f) Identification of a collaborating institute - as well as other potential institutions and individuals - to act as the focal point for collection and dissemination of information on appropriate technology for health: publication of a directory of the respondents in April 1978 (WHO);

(g) The International Forum on Appropriate Industrial Technology, held at New Delhi from 20 to 30 November 1978, was followed by a governmental meeting of ministers of selected developed and developing countries which considered the policy aspects of the Forum (UNIDO).

112. The following publications have been issued:

(a) Transfer of technology: its implications for development and environment (United Nations publication, Sales No. E.78.II.D.10) (UNCTAD/UNEP);

(b) Development, environment and technology: towards a technology for self-reliance (United Nations publication, Sales No. E.78.II.D.11) (UNCTAD/UNEP); 49/

(c) Fund report on environmentally sound and appropriate technology for the sugar industry in Africa (UNIDO, UNEP); 50/

(d) A special double issue of African Environment on environmentally sound and appropriate technology (UNEP, ENDA);

(e) The book "Non-waste technology and production", based on ECE seminars (by Pergamon Press for UNEP);

(f) Two technical memoranda on sugar processing and rice milling, a technical report on appropriate technology for employment generation in the food processing and drink industries in developing countries, the report of the regional seminar for South-East Asia on the application of appropriate technology in forestry, a field study on institutional and administrative constraints on the choice of building technology, and a working paper on the application and upgrading of indigenous technology in irrigation works (ILO);

49/ FP/0402-75-01; UNEP/FUND/PROJECTS/P.19.

50/ FP/0402-75-04; UNEP/FUND/PROJECTS/C.27.

- (g) Three newsletters on appropriate technology for health (WHO);
- (h) Publication of seven reports on appropriate technology for water supply and waste disposal in developing countries (World Bank).

(d) Urgent needs

113. The urgent need in relation to environmentally sound and appropriate technology is for intensification of efforts in the United Nations system for the collection and dissemination of information.

(e) Proposed objectives and strategies

114. As a result of the in-depth review and inter-agency consultations at the thematic joint programming exercise, Geneva, (October 24-25, 1978) the Executive Director proposes the following reformulated objective and strategies:

(a) Objective:

To promote the development and application of environmentally sound and appropriate technology;

(b) Strategies:

- To promote research and development in technology, with due consideration to environmental, social and economic factors;
- To develop environmentally sound criteria, methodologies and guidelines for technological assessment, and choice and transfer of technology, in decision-making processes at all levels;
- To recommend policies that reduce or eliminate social and economic constraints which hinder the development, promotion, transfer and application of environmentally sound and appropriate technology;
- To establish a network of institutions that could, inter alia, collect and disseminate and demonstrate through practical activities and projects environmentally sound and appropriate technology relevant to a variety of environments;
- To strengthen, through information, technical assistance, education and training, the capabilities of developing countries in the realization of the objective;
- To strengthen the environmental content in the design and implementation of co-ordinated and joint programmes and activities within the United Nations system in the area of technology.

(f) Work plan

Objectives	Activities
<p>(i) To promote the development and application of environmentally sound and appropriate technology</p> <p><u>Goal 12 for 1982</u></p> <p>"A global network of institutions to test, apply and publish advice on appropriate and environmentally sound technology, particularly for use in isolated rural areas". (also relevant to activities under Human settlements and Energy)</p>	<p><u>Promotion of centres for development and transfer of technology</u></p> <p>May 1979. Africa Centre operational (ECA, UNCTAD, UNEP)</p> <p>1980-1981. Arab Centre operational (ECWA)</p> <p>1979. Three projects in the network in operation <u>a/</u> (UNEP, national institutions)</p> <p>1981. Three more projects in the network operational (UNEP, national institutions)</p> <p>1982. Four more projects in the network (UNEP, national institutions, possibly agencies)</p> <p>1979-1982. Publication and dissemination of information under each project above (UNEP, national institutions, United Nations system)</p> <p>1979. Publication of proceedings and case studies, reports on environmentally sound and appropriate technology on food and health in Latin America (CIFCA, UNEP, Colegio de Mexico (CEESTEM))</p> <p>1979. Implementation of project on management of water hyacinth: publication of country reports (UNEP, Commonwealth Secretariat, Governments)</p> <p>1980. Publication of compendium on environmentally sound and appropriate technology (UNEP)</p> <p>1979-1982. Training component in each of the above projects of the network (UNEP, national institutions)</p> <p><u>Training seminars and meetings</u></p> <p>1979. Training seminar on biogas (UNEP, Government of China)</p> <p>1979. <u>Ad hoc</u> meeting on low and non-waste technology in the iron and steel industry (ECE)</p> <p>1979. Seminar on appropriate technologies in manufacturing industries (ILO, DANIDA)</p> <p>1979. National workshops on appropriate construction technology (ILO, DANIDA, Governments)</p> <p>1979. Regional seminar on the application of appropriate technology in forestry (ILO, Finland, ADB)</p>

a/ FP/0402-78-01; UNEP/FUND/PROJECTS/A.135.

Objectives	Activities
	<p>1979. Advisory services on energy and employment policy and published studies (in the context of effect of higher oil prices on technological choice and employment in countries of the Indian sub-continent) (ILO, SAREC)</p> <p>1979. Advisory services on implementation of appropriate construction technology (feasibility of labour intensive road construction) (ILO, World Bank, SIDA)</p> <p>1979-1980. Compilation <u>b/</u> of available information on low- and non-waste technology in the ECE region (UNEP, ECE)</p> <p>1980. Production of one technical memorandum on fish processing and packaging (ILO, UNEP) and preparation of other technical memoranda (ILO, UNEP)</p> <p>1980. Dissemination of information on environmentally sound and appropriate technology through NGOs (UNEP, IMAT, TRANET, etc.)</p> <p>1980. Seminar on the application of appropriate technology in road construction (ILO, DANIDA)</p> <p><u>Studies</u></p> <p>1979. Publication of case studies <u>c/</u> on the economic, social and environmental implications of technology transfer in tourism (Jamaica), the housing sector (Hamedan), pesticide use (Central America), food processing (Mexico), pharmaceutical technology (Senegal) and maize technology (United Republic of Tanzania), and of interactions between technological responses and environmental changes (Sri Lanka)</p> <p>1979. Study on appropriate farm tools and equipment in Zambia (ILO, SAREC)</p> <p>1979. Three studies on technology and rural women (ILO, SAREC)</p> <p>1980. Study on institutional and administrative constraints on the promotion of appropriate building technology (ILO, SAREC)</p>

b/ FP/0402-78-02; UNEP/FUND/PROJECTS/A.136.

c/ FP/0402-75-01; UNEP/FUND/PROJECTS/C.19.

Objectives	Activities
	1980. Policy-oriented studies on Government policies towards appropriate technology (ILO) <u>Guidelines</u> 1979. Publication of guide catalogue on tools and equipment for labour-based construction (ILO, SIDA) 1980. Guidelines on the evaluation of handicrafts and small scale industry (ILO, SIDA, SAREC)

(g) Budgetary implications

Organization Agency/SO	(Thousands of \$)				
	1977	1978	1979	1980	1981
WHO	-	115.0	246.0	213.5	213.5
UN/OETO	-	-	135.0	75.0	75.0
ILO <u>a/</u>	-	-	280.0	435.0	385.0
UNESCO	-	-	103.0	61.0	80.0
UNEP	227.0	204.0	250.0 <u>b/</u>	250.0 <u>b/</u>	250.0 <u>b/</u>
Total:	227.0	319.0	1,014.0	1,034.5	1,003.5

a/ Estimated data, including the principal technology areas: water, information, general development of human settlements and human settlements technology and energy technology; the breakdown is not repeated in water, information, human settlements and energy sections of this document.

b/ Planned.

4. Industry and environment
(budget sub-line 0408)

(a) Problem addressed

115. There is evidence that the incorporation of appropriate environmental elements in the industrialization process promotes sustainable development, while the lack of such measures had led to undesirable consequences on the human environment. It is, therefore, of great importance to gather and disseminate information and to assess the various approaches to taking environmental considerations into account in such aspect of industrialization as primary manufacturing, resource management and conservation, industrial siting, plant design, construction and operation, pollution abatement and pollution prevention, and waste disposal and recycling. In addition, the socio-economic aspects of industrialization and of the utilization of resulting products, e.g. motor vehicles and chemicals, need consideration in order to promote industrial development in the most environmentally sound and cost-effective manner.

(b) Authority

116. The objectives, strategies and 1982 goal for this component of the environment programme, as approved by the Governing Council, are stated in UNEP/GC/INFORMATION/1/Rev.2, pages 26-28.

(c) Progress report

117. The following developments have taken place since the Governing Council's sixth session:

(a) Environmental considerations of major industrial sectors:

- (i) The third revision of regulation 15 relating to the emission of air pollutants from motor vehicles, adopted by the Inland Transport Committee, entered into force in March 1978 (ECE);
- (ii) Reports, including chapters on environmental aspects, have been published on the petrochemicals, pharmaceuticals, and leather and leather products industrial sectors (UNIDO);
- (iii) A seminar held in Poland made recommendations to Governments on the control of air pollution in several branches of the organic chemical industry (ECE);
- (iv) "Environmental considerations for the industrial development section" were published (August 1978) (World Bank);
- (v) An overview on the environmental aspects of the petroleum industry was published (June 1978) (UNEP);
- (vi) A comprehensive work programme for abatement and prevention of air pollution from all sources, particularly industrial, in the Mexico Valley was prepared by an expert group and submitted to the Government of Mexico (Mexico D.F., UNEP);

(b) Working environment:

- (i) A second intersecretariat consultative meeting on improvement of the working environment adopted a phased procedure for the preparation and adoption of a co-ordinated programme of action of the United Nations system for the improvement of the working environment, pursuant to Governing Council decisions 87 B (V) and 6/6. Thematic joint programming is planned for October 1979 (ILO, WHO, UNIDO, IAEA, UNEP and other concerned agencies);
- (ii) "Occupational health and safety guidelines for the pulp and paper industry" were published (November 1978) (World Bank);

(c) Industrial resource and residues management:

- (i) A compendium of technologies used in the treatment of residues of agriculture, fisheries, forestry and related industries, a bibliography and a world directory of institutions concerned with this subject 51/ have been published (1978) (FAO); 52/
- (ii) An analysis of an FAO survey on the utilization of residues of agriculture, fisheries, forestry and related industries has been published (1978) (FAO);

(d) Information

- (i) A computerized environmental industrial information storage and retrieval system, with collaboration and assistance of UNESCO's CDS/ISIS, and in close co-operation with UNIDO's INTIS, has become operational (January 1979) in the UNEP Office of Industry and Environment has been registered as a source with INFOTERRA;
- (ii) The first issue of a quarterly newsletter on industry and environment has been published (December 1978) (UNEP).

(e) Urgent needs

118. The urgent needs in relation to industry and environment are for:

(a) Development of legislative and administrative measures to accelerate the acceptance of guidelines and recommendations on the environmental aspects of different industries;

(b) Promotion of effective involvement of trade unions and workers in the development and implementation of environmental protection policies.

(f) Proposed objectives and strategies

119. As a result of the in-depth review and the first inter-agency consultations at the thematic joint programming meeting, Geneva (26 October 1978) the Executive Director proposes the following revised objectives and strategies:

51/ FAO Agricultural Services Pulletin Series.

52/ Also relevant to environmentally sound and appropriate technology subject area above.

(a) Objectives:

- To promote the development and dissemination of guidelines for use by Governments and industry in assessing, controlling and minimizing adverse environmental (including health) effects of major sectors of industry, for the integration of environmental considerations into the planning, siting, construction and operation industry, and for the improvement of the working environment;
- To stimulate effective and rational use of resources, renewable and non-renewable, human and material, in the manufacture and distribution of industry-based goods and services.

(b) Strategies:

- To enlist the co-operation of Governments, industry and relevant international institutions (including trade unions) in organizing industrial sectoral and intersectoral workshops and technical groups, defining and analysing relevant problems and proposing specific solutions;
- To test and monitor the application of methodologies and criteria for impact assessment and environmental criteria for industrial siting in different regions of the world;
- To test and apply specific criteria for incorporating environmental parameters into industrial relocation in various regions with different physical and socio-economic conditions;
- To encourage the development and implementing of resource - conserving and pollution prevention policies in relation to specific sectors of industry;
- To disseminate and promote exchange of industrial environmental information and experience through a computerized storage and retrieval system;
- To integrate industrial environmental aspects into education and training programmes for managers, engineers and workers.

(f) Work plan

Objectives	Activities
<p>(i) To promote the development and dissemination of guidelines for use by Governments and industry in assessing, controlling and minimizing adverse environmental (including health) effects of major sectors of industry, for the integration of environmental considerations into the planning, siting, construction and operational aspects of industry, and for the improvement of the working environment</p>	<p>1979. Guidelines for primary and secondary aluminium, and primary and secondary lead smelters, zinc concentrate separation and zinc smelting (ECE)</p> <p>1979. Preparation of guidelines on contingency planning for oil spill control and clean-up (IMCO, UNEP)</p> <p>1979. Preparation of Part I of a manual on the treatment of pulp and paper mill effluents and emissions (UNEP, IVL, SIDA); Part II to be published in 1981</p> <p>1979. Industrial sector reports including sections on environment, on iron and steel industry, fertilizer industry, vegetable oils and fat industry, on agricultural machinery and capital goods industries (UNIDO)</p> <p>1979. Completion of ACC study on impact of the industrialization process on environmental health (WHO, FAO, UNEP, agencies)</p> <p>1979-1981. Guidelines on control of emissions from the inorganic fertilizers, soda, chlorine and inorganic pigment industries (ECE)</p> <p>1980. Publication of methodologies for industrial environment impact assessment and environmental criteria for the siting of industry (UNEP) followed over the next two years by regional seminars to test the methodologies and criteria (UNEP, UNIDO)</p> <p>1980. Preparation of guidelines on the use and disposal of red mud in bauxite mining and aluminium extraction (UNEP)</p> <p>1980-1981. Guidelines on working conditions in the petroleum industry including offshore activities; in the iron and steel industry and fishing industry (ILO)</p> <p>1980-1981. Guidelines on abatement strategies to control air pollution from motor vehicles (UNEP)</p>

Objectives	Activities
<p>(ii) To stimulate effective and rational use of resources renewable and non-renewable, human and material, in the manufacture and distribution of industry-based goods and services</p>	<p>1980-1981. Guidelines for environmental management at mines, steel works (UNEP)</p> <p>1981. Publications of guidelines for siting of pulp and paper mills in different regions (UNEP, IVL, SIDA)</p> <p>1981. Publication of manual on industrial air pollutants (particulates, sulphur dioxide, etc.) (United Nations, ECE, WHO, European Regional Office)</p> <p>1981. Regulations for control of emissions from motor cycles and mopeds and on noises from motor vehicles (ECE)</p> <p>1981. Guidelines on working conditions in rail transportation, vocational training (ILO)</p> <p>1979. Technical consultation on post-harvest losses (fruits and vegetables, roots and tubers): proceedings published and a seminar held in 1981 (FAO, UNEP)</p> <p>1979. Reports on studies on utilization of wastes by the chemical industry and low and non-waste technology in iron and steel industry (ECE)</p> <p>1979. Publication of booklets on environmental aspects of the cement, the sugar and the aluminium industries, and "pollution prevention pays" (UNEP)</p> <p>1979. Regional workshop on residue utilization in Asia and the Pacific (ESCAP, FAO, UNEP)</p> <p>1979. Expert workshop on the environmental aspects of the chemical industry: proceedings published in 1980 (UNEP)</p> <p>First half of 1979. Joint symposium on individual equipment for protection against employment accidents and occupational diseases, Spain (ILO, International Security Association)</p> <p>1979 onwards. Publication of a quarterly newsletter on tropical information on industry and environment (UNEP)</p> <p>1979-1982. Operation and promotion of a computerized industrial environmental information storage and retrieval system (UNEP): operation of system by UNIDO in 1982</p> <p>1979-1982. Preparation and publication of a compendium of methodologies on low and non-waste technology (ECE, UNEP)</p>

Objectives	Activities
	<p>1979-1982. Fellowship training programme for specific industrial sectors (UNEP)</p> <p>1980. Regional workshop on residue utilization in Latin America (ECLA, FAO, UNEP)</p> <p>1980. Workshop to define environmental problems of non-ferrous metals industry; proceedings published in 1980 and a booklet in 1981 (UNEP)</p> <p>1980. Report on review of technical and economic aspects of petroleum products quality and impact on the environment (UNEP)</p> <p>1980. Seminar on trade union attitudes, policies and programme in relation to the environment (ILO, UNEP)</p> <p>1980. Regional meeting in West Asia on environmental management of aluminium smelters (WHO, ILO, UNIDO, IAPI, UNEP)</p> <p>1980. Establishment of environmental consultative committees on the iron and steel industry and the publication of booklets on the environmental aspects of these industries (UNEP)</p> <p>1980-1981. Third Tripartite Technical meeting for the Timber Industry will, <u>inter alia</u>, consider occupational safety and health problems in the timber industry (ILO)</p> <p>1982. Regional workshop on residue utilization in Africa (ECA, FAO, UNEP)</p>

(g) Budgetary implications

Organization	(Thousands of \$)				
	1977	1978	1979	1980	1981
ESCAP	41.3 <u>a/</u>	41.3 <u>a/</u>	41.3 <u>a/</u>	50.0 <u>b/</u>	50.0 <u>b/</u>
WHO <u>c/</u>	-	-	29.0	29.0	29.0
ILO <u>d/</u>	-	460.0 <u>e/</u>	460.0 <u>e/</u>	630.0 <u>f/</u>	630.0 <u>f/</u>
UNEP	566.0	607.0	900.0 <u>g/</u>	1,000.0 <u>g/</u>	910.0 <u>g/</u>
Total:	607.3	1,108.3	1,430.3	1,709.0	1,619.0

a/ These figures represent a total expenditure of \$124,000 for three years, broken down equally for each year.

b/ These figures represent a total expenditure of \$150,000 for the three years 1980-1982 broken down equally for each year.

c/ Some relevant data reflected under IRPTC and Human health.

d/ Estimated data.

e/ These figures represent a total expenditure of \$920,000 for two years, broken down equally for each year.

f/ These figures represent a total expenditure of \$1,260,000 for two years, broken down equally for each year.

g/ Planned.

D. OCEANS
(budget line 05)

I. Global programme

(a) Marine pollution
(budget sub-line 0501)

(i) Problem addressed

120. With the growing awareness on the part of many Governments and organizations of the threat to the global marine ecosystems from pollution, many questions have been raised as to the extent, sources and trends of marine pollution and its impact on human health, marine ecosystems, resources and amenities. A clear scientific picture of the state of the marine environment is a necessary basis for environmental management policies. A key to arriving at a global assessment of the state of pollution of the world oceans is to ensure that data and information generated by marine monitoring and research programmes throughout the world under numerous national and regional activities are compatible and comparable. As these data are based on national activities it is also important that technical assistance be available to national institutions which may require such assistance to enable them to participate effectively in environmental assessment programmes.

(ii) Authority

121. The objectives, strategies and goals for this component of the environment programme are implicit in those approved by the Governing Council in GEMS, living marine resources and regional seas, and are given in UNEP/GC/INFORMATION/1/Rev.2, pages 2-3 and 28-29.

(iii) Progress report

122. The following progress has been achieved since the Governing Council's sixth session:

(a) Publication of a report on the implications of sea-bed exploitation and coastal area development 53/ (GESAMP);

(b) Conduct, at Mombasa in July 1978, of the third training course for participants from developing countries on aquatic pollution in relation to the protection of living resources (FAO, SIDA);

(c) Conduct, at Copenhagen in August 1978, of a training course on coastal pollution control (WHO, DANIDA).

53/ "Scientific Aspects of Pollution Arising from the Exploration and Exploitation of the Sea-Bed", GESAMP, Reports and Studies No. 7, 1977.

(iv) Work plan

Objectives	Activities
Assessment of the state of ocean pollution and its impact on marine ecosystems	<p>1979. Report on interchange of pollutants between the atmosphere and oceans <u>a/</u> (GESAMP)</p> <p>1979. Workshop on river inputs to ocean systems <u>b/</u> (IOC, UNEP, ICSU, FAO)</p> <p>1980. Report on evaluation of hazards of harmful substances carried by ships <u>c/</u> (GESAMP)</p> <p>1980. Report on marine pollution implications of coastal area development (GESAMP)</p> <p>1980. Report on scientific aspects of removal of harmful substances from waste water (GESAMP)</p> <p>1981. Report on the health of the oceans (GESAMP)</p> <p>1982. Review of potentially harmful substances (GESAMP)</p>

a/ FP/0501-77-02; UNEP/FUND/PROJECTS/A.68.

b/ FP/0501-78-01; UNEP/FUND/PROJECTS/A.114.

c/ FP/0501-77-01; UNEP/FUND/PROJECTS/A.67

(v) Budgetary implications

Organization	(Thousands of \$)				
	1977	1978	1979	1980	1981
IOC (UNESCO)	24.0	55.5	13.0	-	-
IAEA	25.0	-	-	-	-
IMCO	8.5	11.5	-	-	-
WMO	13.3	12.9	4.9	-	-
UNEP	101.7	90.0	100.0 <u>a/</u>	90.0 <u>a/</u>	80.0 <u>a/</u>
Total:	172.5	169.9	117.9	90.0	80.0

a/ Planned.

(b) Living marine resources
(budget sub-line 0502)

(i) Problem addressed

123. The living resources of the oceans provide man with an abundant renewable supply of proteins and oils. Various forms of marine life constitute important dietary items of many people and there is growing interest in marine organisms as sources of biologically active organic compounds. Measures for managing the living resources of the seas and their habitats are not sufficiently effective. Some of the major traditional world whaling and fishery resources have recently declined as a result of over-exploitation. Pollution, especially of the biologically productive coastal waters, is now recognized as an increasingly serious problem, but an additional threat is the steady contraction of critical habitats and nursery areas, such as mangroves, coral reefs and phytobenthic communities in the coastal zone. Incidental take of living marine organisms other than those primarily sought for is becoming a serious problem as fishing activities are intensified.

(ii) Authority

124. The objectives and strategies and 1982 goal for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, page 28.

(iii) Progress report

125. The following developments have taken place since the Governing Council's sixth session:

(a) Publication of a draft world conservation strategy and supporting source-books which include chapters on living marine resources, and of directories of information on protected areas and threatened species; (see para. 95 above);

(b) Agreement by the First International Monk Seal Conference, May 1978, Rhodes, Greece 54/ (Greece, UNEP, the University of Guelph and IUCN), on a plan of action for the Mediterranean Monk Seal. This plan will provide an important element of the global plan of action on marine mammals, 55/ to be prepared by UNEP in February 1979 and reviewed by an ad hoc expert group in May 1979. The global plan is closely connected with the proposed revision of the 1946 International Convention for the Regulation of Whaling, prepared by IWC, a first draft of which was discussed by a governmental meeting at Copenhagen in July 1978;

(c) Adoption of explicit protection measures by the Norwegian Government as a result of EIFAC's 56/ work on heavy metal pollution in relation to Norwegian salmonid fishery (FAO, UNEP);

54/ FP/0502-78-01; UNEP/FUND/PROJECTS/A.106.

55/ FP/0502-78-02; UNEP/FUND/PROJECTS/A.141.

56/ FP/0502-75-01.

(d) Advances in the methodology of fishery monitoring resulting from the project 57/ on monitoring of environmental effects on marine world fishery resources (FAO, UNEP). Difficulties in pin-pointing the causes of changes taking place in the environment of the fishery resources still remain;

(e) Publication of the final report (September 1978) on contaminants in aquatic organisms, which provided an input for the design of a computer programme 58/ to assist in monitoring (FAO, UNEP).

(iv) Urgent needs

126. The urgent needs in relation to living marine resources are for:

(a) Effective implementation of measures for managing marine mammals and strict enforcement of existing legislation and protection of endangered species;

(b) Formulation and effective implementation of national legislation to protect the natural habitats of inshore marine living resources in developing countries;

(c) Formulation and effective implementation of measures to manage major fin-fish and shellfish resources in territorial waters.

57/ FP/0502-73-02.

58/ FP/0502-73-03.

(v) Work plan

Objectives	Activities
<p>To maintain the productivity and health of marine eco-systems and their population of plants and animals at, or restore them to, optimum levels. (This objective is closely related to Goal 9 - restoration conservation and management of living resources - see Wildlife and protected areas)</p>	<p>1979. Submission of draft <u>plan of action</u> on marine mammals <u>a/</u> to international organizations (UNEP, FAO)</p> <p>1980-1981. Adoption and implementation of the plan of action (Governments)</p> <p>1980-1981. Co-operation in the revision of the <u>Whaling Convention</u> and in the implementation of the <u>International Decade of Cetacean Research</u> (UNEP, IWC)</p> <p>1979. Scientific workshop on the conservation of marine living resources of tropical African seas: production of guidelines for protection and restoration of coastal habitats (UNEP, UNESCO, ALECSO, IUCN, Governments)</p> <p>August 1979. Assessment of the status of marine living resources of the Pacific region by the fourteenth Pacific Science Congress <u>b/</u> (UNEP, Governments)</p> <p>1980-1982. Strengthening of co-operative investigations on mixed tropical fisheries (UNEP, FAO, Governments)</p> <p>1982. Formulation of recommendations on catch limits, closed fishing seasons and areas, development of selective fishing gear and other methods of controlling incidental take (UNEP, FAO, Governments)</p>

a/ FP/0502-78-02; UNEP/FUND/PROJECTS/A.141.

b/ FP/1105-78-02.

(vi) Budgetary Implications

Organizations and Governments	(Thousands of \$)				
	1977	1978	1979	1980	1981
FAO	94.9	28.3	5.3	-	-
Government of Greece	-	26.5	-	-	-
UNEP	74.9	56.0	100.0 <u>a/</u>	200.0 <u>a/</u>	170.0 <u>a/</u>
Total:	169.8	110.8	105.3	200.0	170.0

a/ Planned.

2. Regional seas programme
(budget sub-line 0503)

(a) Problem addressed

127. With the intensification of man's activities both on land and in the sea, pressure on marine and coastal ecosystems, which frequently leads to visible deterioration and pollution, have increased. Governments and regional and international organizations have become increasingly aware of the need for individual and collective action to prevent marine pollution at the regional level so as to achieve the efficient management of coastal and marine resources on a sustainable basis. Furthermore, it has been recognized that such co-operative efforts at the regional level should be comprehensive in scope, taking account of all factors, both maritime and land-based, affecting the ecoregion concerned, and should aim at the management of its resources on a sustainable basis and the implementation of environmentally sound development practices.

(b) Authority

128. The objectives and strategies and 1982 goal for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 28-29.

(c) Progress report

129. The following progress has been achieved since the report to the Governing Council at its sixth session:

(a) Mediterranean:

- (i) Eleven Mediterranean coastal States and the European Economic Commission have ratified the 1976 Convention for the Protection of the Mediterranean Sea against Pollution and related protocols; the Convention entered into force on 12 February 1978;
- (ii) An additional State, bringing the total to 16, has agreed to participate in the Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MEDPOL) which presently has 82 participating national research centres, and a progress report on MEDPOL for 1975-1978 has been prepared 59/ (UNEP);
- (iii) A workshop on Pollution of the Mediterranean was held at Antalya from 24 to 25 November 1978 (International Commission for the Scientific Exploration of the Mediterranean Sea, UNEP);
- (iv) Agreements have been reached concerning the nomination of regional activity centres for the operational co-ordination of the Blue Plan (UNEP, Centre d'activités développement environnement en Méditerranée (MEDEAS), Cannes, France) and concerning assistance in the co-ordination of the priority actions programme (UNEP, Town Planning Institute in Split, Yugoslavia);
- (v) Within the priority actions programme of the Mediterranean Action Plan, meetings of experts were held to formulate co-operative regional projects on aquaculture, 60/ freshwater resources 61/ and renewable sources of energy. 62/ A joint UNDP/UNEP programme unit has been established 63/ to co-ordinate the implementation of related projects of interest to both organizations;

(b) Kuwait Action Plan:

- (i) The basic programme document for the implementation of the Kuwait Action Plan was adopted at a meeting of government nominated experts 64/ in January 1979 (Governments, specialized agencies, UNEP);

59/ UNEP/IG.14/INF.4 and 5.

60/ UNEP/WG.15/5/Rev.1.

61/ UNEP/WG.16/5.

62/ UNEP/WG.20/5.

63/ FP/0503-78-02.

64/ • UNEP/WG.23/4.

(ii) An agreement for the establishment of an interim secretariat in Kuwait has been concluded with the Government of Kuwait (UNEP, Government of Kuwait);

(iii) A Regional Trust Fund of \$5,820,000 under the supervision of UNEP has been established (Governments, UNEP).

(c) The Caribbean:

See under Environmental management, paragraph 163.

(d) The Gulf of Guinea:

(i) A draft action plan was prepared and sent to Governments in October 1978 (UNEP, agencies, UNDP);

(ii) Technical documentation supporting the draft action plan has been prepared (Study on legal aspects of marine environment protection in the Gulf of Guinea and adjacent coastal areas (FAO, UNEP); The Gulf of Guinea: Pollution, the need for control and possible mechanisms thereof (FAO, UNEP); Study on co-operation in pollution emergencies (IMCO, UNEP); Major uses of the coastal area, Gulf of Guinea (IESA, UNEP));

(iii) A UNEP mission visited the coastal States of the West African region (November 1978 - March 1979) to seek the Governments' comments concerning the draft action plan (UNEP); 65/

(e) Red Sea:

A study was prepared on the establishment and management of protected areas in Jordan (ALECSO, UNEP);

(f) South-West Pacific:

See under Environmental management, paragraph 164.

(g) South-East Pacific:

A meeting held at Santiago, Chile in November 1978 to discuss possible components of a comprehensive action plan for the region recommended activities relevant to the assessment of present state of pollution and control of pollutants entering the region, adopted guidelines for formulation of a convention on the protection of marine environment from pollution, and adopted a draft agreement on regional co-operation in combating pollution in cases of emergency (CPPS, IOC, FAO, IMCO, WHO, UNEP).

(d) Urgent needs

130. The urgent needs in relation to regional seas programmes are:

(a) Full co-operation of Governments to ensure implementation of approved action plans or refinement and adoption of new ones;

(b) Agreement by concerned Governments on means of financing various activities under approved action plans.

(e) Work plan

Objectives	Activities
<p><u>Goal 14. for 1982</u></p> <p>"Adoption and implementation of action plans for each of the regional seas covered by the UNEP programme"</p> <p>To develop comprehensive action plans for the protection and development of specific regional seas areas for consideration by Governments concerned and to support their implementation</p>	<p><u>Mediterranean a/</u></p> <p>1979. Second interagency meeting on co-ordination of the activities of the United Nations system relevant to the regional seas programme</p> <p>1980. Adoption of protocol concerning land-based sources of pollution (United Nations, WHO, ILO, IMCO, UNESCO, IUCN, UNEP)</p> <p>1979-1982. Development of additional protocols in areas such as specially protected areas and exploration and exploitation of the sea-bed for consideration by Contracting Parties (all relevant organizations)</p> <p>1981. Second meeting of Contracting Parties to Barcelona Convention (Governments and relevant organizations)</p> <p><u>Assessment of sources, levels, effects and trends of marine pollution</u></p> <p>1979. Report on the state of pollution in the Mediterranean (ECE, UNIDO, UNESCO, IOC, FAO, WHO, WMO, IMCO, IAEA, UNEP)</p> <p>1979. Guidelines on the control of the discharge of potentially harmful substances into the Mediterranean Sea (WHO, UNEP)</p> <p>1979. Data profiles on substances for evaluation of their environmental hazards (UNEP)</p> <p>1979. Final report on pilot phase of environmental assessment and state of pollution in Mediterranean Sea (all relevant organizations)</p> <p>1981. Formulation and adoption by Governments of long-term programme for continuing monitoring system</p>

a/ Workplan for Mediterranean subject to approval of, and funds made available by, the Intergovernmental Review Meeting and First Meeting of Contracting Parties to the Barcelona Convention, Geneva, 5-10 February 1979.

Objectives	Activities
	<p><u>Co-ordination of environmental management efforts</u></p> <p>1979. Report on sectoral studies carried out during first phase of Blue Plan (MEDEAS, ECE, ECA, ECWA, UNIDO, FAO, UNESCO, WHO, WMO, IMCO, WTO, IUCN, ALECSO, UNEP, UNDP) <u>b/</u></p> <p>1979. Establishment of association of protected areas (IUCN, UNESCO, FAO, UNEP)</p> <p>1980. Report on first phase of Blue Plan (all relevant organizations)</p> <p>1979-1980. Start of the operational phase of regional projects on aquaculture (1979), renewable sources of energy (1979) and fresh water resources (1980) (all relevant organizations)</p> <p><u>Kuwait Action Plan</u></p> <p>1980-1985. Adoption of additional protocols, for example on land-based sources of marine pollution (WHO, FAO, UNEP, Governments)</p> <p><u>Assessment</u></p> <p>1979-1980. Reports on assessment of the origin and magnitude of oil pollution, effects of natural geological processes, coastal engineering and mining on human health, marine ecosystems and human activities (United Nations, FAO, IMCO, WHO, IOC, UNIDO, WMO, IAEA, UNESCO, UNEP)</p> <p><u>Co-ordination</u></p> <p>1979-1980. A series of reports on co-ordination of national health services; marine and land transport; national water management policies and practices; establishment of specially protected areas (WHO, FAO, IMCO, United Nations, UNCTAD, IUCN, UNESCO)</p> <p>1979-1980. Draft principles and guidelines and contingency plans for accidents involving oil exploration, exploitation and transport (United Nations, IMCO, UNEP)</p> <p>1980. Secretariat and administration functions of the Convention and Trust Fund assumed by Governments</p> <p>February 1980. Review of implementation of Phase One of the Action Plan and decision on Phase Two (Governments)</p>

b/ FP/0503-78-02; UNEP/FUND/PROJECTS/A.142

Objectives	Activities
	<p>March 1980. Expert group meeting on marine emergency mutual aid (IMCO, UNEP)</p> <p>Mid-1980. Establishment of the regional organization for the Protection of the Marine Environment and the Marine Emergencies mutual aid centre (Governments, IMCO, UNEP)</p> <p><u>The Caribbean</u> (see also under Environmental management)</p> <p><u>Assessment</u></p> <p>1979. Overview on the state of pollution in the wider Caribbean region (IOC, UNESCO, United Nations, UNIDO, WHO, FAO, IUCN, ECLA)</p> <p>1979. Marine pollution control project in Cuba initiated (UNDP, UNEP)</p> <p><u>The Gulf of Guinea</u></p> <p>1979. First meeting of government nominated experts to discuss and advise on the first draft of the action plan, including a draft regional convention and protocol on pollution from ships (ECA, UNIDO, UNESCO, FAO, IOC, WHO, WMO, IAEA, IUCN, OAU, ECOWAS, other regional and sub-regional organizations and UNEP)</p> <p>Early 1980. Second meeting of government nominated experts to discuss action plan (Governments)</p> <p>Mid 1980. Conference of Plenipotentiaries to adopt the action plan (Governments)</p> <p>1980-1982. Implementation of action plan (Governments, ECA, UNIDO, UNESCO, FAO, IOC, WHO, WMO, IAEA, IUCN, OAU, ECOWAS)</p> <p><u>East Asian Seas</u></p> <p>1979. Training on prevention, abatement and control of pollution from ships (IMCO, UNEP, Governments)</p> <p>1979. Mission to the region to prepare draft action plan (ESCAP, UNIDO, FAO, UNESCO, IOC, WHO, WMO, IMCO, IAEA, IUCN, UNEP, and regional and sub-regional organizations)</p> <p>1979. Government nominated experts meeting to review draft action plan.</p> <p>1980. Intergovernmental meeting to consider and draft action plan (Governments)</p> <p>1981. Adoption of action plan by intergovernmental meeting (Governments)</p>

Objectives	Activities
	<p>1980-1981. Implementation of the action plan. <u>Red Sea c/</u></p> <p>1977-1980. Implementation of the Action Plan adopted in January 1976 (ALECSO)</p> <p>1979. Intergovernmental conference on a Convention for the protection of the Red Sea and the Gulf of Guinea (ALECSO)</p> <p>Late 1980. Intergovernmental regional conference to review results of Phase I and to decide on Phase II of the Action Plan (ALECSO)</p> <p>1982. Training courses in marine sciences (ALECSO, UNESCO, Governments)</p> <p><u>South-west Pacific</u> (see under Environmental management)</p> <p><u>South-east Pacific</u></p> <p>1979. Meeting to discuss principles and guidelines for a regional convention on the protection of the marine environment from pollution and a draft agreement on regional co-operation in combating pollution in cases of emergency (Governments, CPPS)</p> <p>1979. Initiation of a regional pollution monitoring programme (CPPS, IOC, IMCO, FAO, WHO, UNEP)</p> <p>Early 1980. Review of draft action plan by Government-nominated experts (UNEP)</p> <p>Late 1980. Intergovernmental meeting to discuss and adopt a regional action plan (Governments)</p> <p>1981-1983. Implementation of the action plan</p>

c/ Workplan subject to modifications to be agreed at UNEP/ALECSO joint programming session (Cairo, February 1979).

(f) Budgetary implications

Organizations	(Thousands of \$)				
	1977	1978	1979	1980	1981
Mediterranean Regional Trust Fund <u>a/</u>	-	-	-	-	-
Kuwait Regional Trust Fund (Governments)		1,940.0 <u>b/</u>	1,940.0 <u>b/</u>	1,940.0 <u>b/</u>	
WHO	70.0	-	110.0	110.0	110.0
IIMCO <u>c/</u>	900.0	-	990.0	1,050.0	1,200.0
OETO	-	-	70.0	60.0	60.0
ECLA	-	383.0 <u>d/</u>	-	-	-
UNEP	2,900.0	2,930.0	3,870.0 <u>e/</u>	2,700.0 <u>e/</u>	2,500.0 <u>e/</u>
Total:	3,870.0	5,253.0	6,980.0	5,860.0	3,870.0

a/ To be established by first meeting of Contracting parties to Barcelona Convention; Governments and UNEP's contribution to be shown in UNEP/GC.7/7/Add.1.

b/ These figures represent a total expenditure of \$5,820,000 for three years, broken down equally for each year.

c/ IIMCO has no particular programme budget covering environmental activities, but estimates that approximately 15 per cent of its total budget relates to activities for the protection of the marine environment.

d/ \$50,000 regular budget and \$333,000 from extra budgetary sources.

e/ Planned.

E. ENERGY 66/
(budget line 07)

1. Problem addressed

131. For the greater part of this century the rising global demand for energy has been met, to an increasing extent, by the use of fossil fuels. The general realization of the finite nature of fossil fuel resources had led to a re-examination of the possibility of developing alternative sources of energy, especially those which are considered renewable, and of the efficiency of energy production, conversion and use. A full assessment of the environmental consequences of energy production and use is necessary to help Governments take sound decisions on various options that could be open to them.

2. Authority

132. Although there are no specifically defined objectives in this component of the environment programme, approved strategies and 1982 goals are given in UNEP/GC/INFORMATION/1/Rev.2, pages 30 and 27 respectively. A number of Governing Council decisions 67/ from the first session onwards have explicitly referred to the energy programme.

3. Progress report

133. The following developments have taken place since the Governing Council's sixth session:

(a) Preparation of the final reports of comprehensive reviews of the environmental impacts of fossil fuels (UNEP), 68/ nuclear energy (IAEA, UNEP) 69/ and renewable sources of energy (solar, wind, biogas geothermal, firewood, hydropower) (UNEP); 70/ After review by international panels of experts, which has already taken place for the first two reviews, the final reports will be published as Parts I, II and III respectively of the series "The Environmental impacts of Production and Use of Energy";

66/ See also supporting information UNEP Report No.1 which describes energy activities within the United Nations system.

67/ Decisions 1 (I), para. 12. (g); 8 (II), para. 6; 29 (III), para. 9 (f); 34 (III); 47 (IV); 60 (IV).

68/ FP/0700-77-01; UNEP/FUND/PROJECTS/A.51.

69/ FP/0700-77-02; UNEP/FUND/PROJECTS/A.52.

70/ FP/0700-78-03; UNEP/FUND/PROJECTS/A.189.

(b) Research and pilot experiments on the use of solar, small hydropower, biogas and wind energy in the Philippines have been initiated (UNEP). 71/ The main feature of the activity will be the use of indigenous technology and equipment from the region;

(c) A review of solar energy technology was completed as part of a broad study of the economic viability of non-conventional energy sources in Latin America (ECLA);

(d) Work has continued on the establishment of experimental rural energy centres in Sri Lanka 72/ and Senegal 73/ and on a feasibility study for one in Mexico (UNEP, Governments, CNRET). The Sri Lanka centre is expected to be fully operational by 1980 and the other two by 1981.

4. Urgent needs

134. The urgent needs in relation to the energy programme are for:

(a) Research and assessment of environmental impacts of new energy technologies (e.g. coal liquefaction and gasification, exploitation of oil-shales);

(b) Development of methods of increasing efficiency of energy production and use in developing countries.

5. Proposed objectives and strategies

135. No specifically defined objectives have been established in this area. Therefore the following objectives and revised strategies are proposed:

(a) Objectives:

- To promote the understanding of the environmental effects of energy production and use, and in particular of the relationship between the levels of different emissions and their effect on weather, human health, plant and animal life and amenity values;
- To promote effective development of alternative environmentally sound sources of energy;

(b) Strategies:

- To review in depth, and periodically update the reports on, the environmental impacts of production, transportation, processing and use of all sources of energy;
- To identify emerging environmental priorities for research and development;

71/ FP/0700-78-01; UNEP/FUND/PROJECTS/A.87.

72/ RA/0700-78-03; UNEP/FUND/PROJECTS/A.115

73/ FP/0700-78-04; UNEP/FUND/PROJECTS/A.124.

- To support research and development programmes, especially in developing countries, dealing with environmental problems of production and use of energy;
- To carry out studies on the relationship between energy conservation and environment and assist in the formulation of guidelines for energy conservation and rational use of energy sources;
- To increase, through experiments, training programmes, seminars and workshops, the awareness of policy-makers and the public, especially in developing countries, of the feasibility of exploiting renewable sources of energy;
- To support research and development programmes to harness renewable sources of energy, particularly in developing countries;
- To promote the exchange of information on the environmental aspects of energy production and use.

6. Work plan

Objectives	Activities
<p>(i) To promote the understanding of the environmental effects of energy production and use, and in particular of the relationship between the levels of different emissions and their effect on weather, human health, plant and animal life and amenity values</p> <p>(ii) To promote effective development of alternative environmentally sound sources of energy (Activities also related to Goal 12 for 1982 - see Environmentally sound and appropriate technology)</p>	<p>1979. Publication of reports on environmental impacts of fossil fuels, nuclear energy and renewable sources of energy (Parts I-III of the series referred to in para. 130 (b)) (UNEP)</p> <p>1979. Panel of experts on the comparative assessment of environmental impacts of all sources of energy (UNEP); followed in 1980 by publication of its report as part IV of the series (UNEP)</p> <p>1979. Completion of two studies on social response to energy conservation and energy options (UNEP)</p> <p>February 1979. Workshop to discuss energy options for East Africa (UNEP, ECWA, Beijer Institute (Sweden), Kenya Academy of Sciences, CNRET, Governments, ALECSO (Results to be reported in Add.1 of this document)</p> <p>May 1979. African Solar Energy Workshop, Atlanta, Georgia, United States of America (UNEP support to African participants)</p> <p>July-August 1979. Expert Group Meeting to review report of survey of feasibility of exploiting renewable sources of energy in the Arab region a/ (UNEP, ALECSO)</p>

a/ FP/0700-78-02; UNEP/FUND/PROJECTS/A.88.

Objectives	Activities
	<p>1979. Seminar on renewable resources, particularly solar, wind and geothermal energy (ECE)</p> <p>1979. Report on environmental aspects of energy production and use with particular reference to new technologies (ECE)</p> <p>1979-1981. Reports on studies of energy options for Africa and of energy needs of developing countries (UNEP)</p> <p>1982-1983. Studies on the solar/nuclear outlook in the ECWA region and on solar energy potential for desert development (ECWA)</p>

7. Budgetary implications

Organizations	(Thousands of \$)				
	1977	1978	1979	1980	1981
ECWA ^{a/}	-	-	181.3	201.2	223.3
ESCAP	428.0 ^{b/}	428.0 ^{b/}	-	-	-
United Nations	-	3-4,000.0 ^{c/}	-	-	-
OETO ^{d/}	-	-	16.0	9.0	9.0
ECLA	-	-	10.0 ^{e/}	10.0 ^{e/}	-
UNIDO	-	-	132.5 ^{f/}	132.5 ^{f/}	-
UNEP	560.0	592.0	670.0 ^{g/}	570.0 ^{g/}	530.0 ^{g/}
Total:	988.0	5,020.0	1,009.8	922.7	762.3

^{a/} Estimated data.

^{b/} These figures represent a total expenditure of \$856,000 for two years, broken down equally for each year.

^{c/} Estimate of United Nations executed UNDP projects.

^{d/} Estimates 1979-1983 considered conservative.

^{e/} These figures represent a total expenditure of \$20,000 for two years, broken down equally for each year.

^{f/} These figures represent a total expenditure of \$265,000 for two years, broken down equally for each year.

^{g/} Planned.

F. NATURAL DISASTERS
(budget line 12)

1. Problem addressed

136. Extreme natural phenomena of sudden onset such as tropical cyclones, floods and earthquakes can cause widespread physical, ecological and socio-economic damage to large areas, the effects of which cannot be coped with by the affected community alone. To protect the human environment, further efforts are needed to co-ordinate activities of the United Nations system and to improve effectiveness in early warning, coupled with increased preparedness and capabilities for prevention and mitigation by disaster prone countries.

2. Authority

137. The objectives, strategies and 1982 goal for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 30-31.

3. Progress report

138. The following progress has been achieved since the Governing Council's sixth session:

(a) A multi-agency memorandum of understanding ^{74/} delineating the respective responsibilities in the field of natural disasters has been circulated to those organizations for signature (UNDRO, WFC, UNIDO, ILO, UNESCO, WMO, WHO and UNEP), and UNDRO has also concluded bilateral memoranda of understanding with nine United Nations bodies;

(b) Early warning systems:

- (i) Under the global component of the WMO Tropical Cyclone Project, several publications relating to early warning systems have been issued (WMO);
- (ii) Under the regional component of the above project, a hurricane operational plan for North and Central America and a programme for the Typhoon Committee's work were adopted and a training programme on methods of flood forecasting was held (Lahore, February - March 1978) (WMO, Governments);
- (iii) A roving seminar on intense precipitation and floods was held in 1978 in six countries in Asia and the South-West Pacific (WMO);
- (iv) A Seminar on the Interpretation, Analysis and Use of Meteorological Satellite Data for countries in Asia and the South-West Pacific was held in 1978 (WMO);
- (v) An inventory of flood-prone areas and existing facilities and services in Africa and North and Central America was carried out (WMO);
- (vi) Tsunami warning systems and public safety measures were strengthened in countries on the Pacific coast of South America (UNESCO);

^{74/} See UNEP/GC/INFORMATION/6/Add.2.

(c) Preparedness:

- (i) A preliminary analysis was made of the state of preparedness in those countries classified "most seriously affected" or "less developed", or both, (UNDRO);
- (ii) A preparedness project in Bangladesh, providing 200 rescue boats, was fully funded (UNDRO, United Nations, Governments);
- (iii) Assistance has been provided to a number of developing countries for the establishment of seismological observatory networks (UNESCO, UNDP);
- (iv) A project on seismology covering four countries in South-East Asia was completed in 1978, and projects in Romania and Vietnam are in operation (UNESCO, Governments);
- (v) An Atlas on avalanches intended to serve as a guide for reporting and classification was published (UNESCO);
- (vi) The Desert Locust Control Programme continued to monitor conditions in locust breeding areas and seasonal migrations, taking action as necessary to destroy locust swarms before they achieve plague status (FAO);
- (vii) A World Expert Advisory Panel of specialists in health problems related to disasters has been established, action has been initiated to establish regional disaster committees or units to advise member States and arrange for training of personnel in health related disaster work, appropriate manuals for various types of disasters have been issued, and a training programme on disaster services is being established (WHO);
- (viii) Technical assistance was provided to Malaysia, the Philippines, Bangladesh, in preparedness measures, and guidelines for disaster prevention and preparedness in tropical cyclone areas were published (WMO);

(d) Prevention and mitigation:

- (i) A mission to five Central American countries has evaluated the degree of vulnerability to disaster risks of current and projected investment programmes in the sub-region (UNDRO);
- (ii) A sub-project of the WMO Tropical Cyclone Project on "Human response to tropical cyclone warnings and their content" was initiated (WMO);

(e) Information, education and training:

- (i) Fellowships were provided in cyclone warning systems and related preparedness arrangements (UNDRO);
- (ii) A regional seminar on remote-sensing techniques for disaster prevention, preparedness and relief was held in Brazil in October 1978; (Outer Space Affairs Division of the United Nations, UNDRO, Governments);

- (iii) Training and technical assistance in the application of remote-sensing technology has been given to officials of developing countries who are concerned with forecasting crop conditions (FAO);
- (f) Technical assistance:
- (i) A one year technical assistance mission to Nepal by a hydrologist/geologist experienced in disaster prevention administration began in January 1978 (UNDRO);
 - (ii) Support was provided for WMO projects in Central America and the Bay of Bengal (UNEP); 75/
 - (iii) Bilateral support was extended to pilot flood forecasting in river basins in Malaysia, Philippines, Republic of Korea and Thailand (Japan, WMO);
 - (iv) Support for flood forecasting and warning system for the Indus River in Pakistan was provided (UNDP, WMO);
 - (v) Support for river and flood forecasting in Sudan was provided (WMO, Voluntary Assistance Programme (VAP)).

4. Urgent needs

139. The urgent need in relation to natural disasters is for improvement of existing techniques for forecasting disaster causing phenomena, particularly floods, tropical cyclones and storm surges.

5. Proposed objectives and strategies

140. As a result of the thematic joint programming exercise, October 1978, the Executive Director proposes that the objectives, strategies and 1982 goal for this subject area be revised as follows:

(a) Objectives

To co-operate in carrying out co-ordinated activities aimed at:

- (i) Optimum operation of early warning systems;
- (ii) Establishing and implementing appropriate measures of preparedness for, and prevention and mitigation of, natural disasters.

(b) Strategies:

- The practical application of existing, and the development of new, knowledge and techniques in the field of early warning systems;
- The development of public awareness and education in disaster-prone developing countries, to introduce the elements of disaster prevention and preparedness as permanent elements at all social levels;

- The application of such preparedness measures as may be necessary and practicable to minimize loss of life and damage caused by natural disasters;
- Dissemination to decision-makers, particularly in disaster-prone developing countries, of existing knowledge in disaster prevention and mitigation, and its application as may be necessary and practicable;
- The introduction, whenever possible, of disaster prevention measures during reconstruction following natural disasters;
- The continued implementation of technical assistance to disaster-prone developing countries in support of the objectives.

(c) Goal 15 for 1982:

Application of proven methods and techniques, and initiation of activities aimed at developing new ones, for the optimum operation of early warning systems for phenomena which may cause natural disasters.

6. Work plan

Objectives	Activities
<p>(i) To co-operate in carrying out co-ordinated activities aimed at optimum operation of early warning systems</p> <p><u>Goal 15 for 1982</u></p> <p>Beginnings of an operational world-wide early warning system for natural disasters</p>	<p><u>Continuing activities</u></p> <p>Improvement of scientific knowledge and of the accuracy of prediction and warnings (UNESCO, UNDRO, ICSU)</p> <p>Strengthening of present operational capability for detecting, tracking and forecasting tropical cyclones (WMO, UNEP)</p> <p>Improvement of techniques for quantitative storm-surge prediction (WMO, UNEP)</p> <p>Strengthening of flood-forecasting capabilities particularly with respect to flooding associated with tropical cyclones and storms (WMO, UNEP)</p> <p>Improvement of tropical cyclone and flood warning systems (WMO, UNEP)</p> <p>Development of a Hydrological Multi-purpose System (WMO)</p> <p>April 1979. Symposium on the prediction of seismic and volcanic activity (UNESCO, UNDRO, ICSU, UNEP)</p> <p>1980-1981. Technical training courses on the prediction of seismic and volcanic activity (UNESCO, UNDRO, ICSU, UNEP)</p>

Objectives	Activities
<p>(ii) To co-operate in carrying out co-ordinated activities aimed at establishing and implementing appropriate measures of preparedness for, and prevention and mitigation of, natural disasters</p>	<p>1980-1981. Three international co-ordination group meetings for the supervision of an international prediction and warning system for tsunamis in the Pacific (UNESCO, WMO)</p> <p>1982. Preparation of a number of manuals and guides to assist in improving the efficiency of early warning systems (UNESCO, WMO)</p> <p><u>Continuing activities</u></p> <p>Strengthening preparedness of the most seriously disaster-prone developing countries (WMO, UNDP, UNDRO)</p> <p>Establishment of a global seismic data bank (UNESCO, UNDP)</p> <p>Regional surveys of seismic hazard (UNESCO, UNDP)</p> <p>Establishment of global observatory network (UNESCO, UNDP)</p> <p>Epidemiological studies of the casualty patterns in disasters (WHO)</p> <p>Development of simple satellite monitoring techniques for the forecasting and prediction of natural phenomena likely to cause disasters; training of nationals from disaster-prone developing countries in the use of these techniques and disseminating information on technological developments (UNDRO, WMO, UNESCO, ICSU, UNEP)</p> <p>Development of the basic principles of earthquake-resistant design and construction particularly with reference to non-engineered housing in rural areas in developing countries (UNESCO, UNDRO, World Bank)</p> <p>Measures to improve and develop pre-disaster arrangements for resources from donors for relief preparedness (UNDRO)</p> <p>Maintenance of a year-round alert for reception analysis and dissemination of information on disasters (UNDRO)</p> <p>Development of a Data Bank on disaster-related matters (UNDRO)</p> <p>Disaster prevention measures during reconstruction planning (UNDRO, World Bank, UNDP)</p> <p>1980. Publication of guidelines for landslide and volcanic hazard zoning (UNESCO, UNDP, UNDRO)</p> <p>1980. Seminars on community preparedness and disaster prevention (UNDRO, WMO)</p>

Objectives	Activities
	<p>Publication of a series of monographs on disaster prevention and mitigation (engineering, health, public information, economics, sociological and legal aspects as well as preparedness and vulnerability analysis) (UNDRO, UNEP)</p> <p>1981. Completion, acceptance by the General Assembly and implementation of an International Disaster Strategy and undertaking technical co-operation activities in disaster-prone areas or individual developing countries (UNDRO)</p> <p>By 1983. Agreements reached on the inclusion of disaster prevention factors in development project planning (UNDRO, UNDP, World Bank, UNIDO, regional banks)</p>

7. Budgetary implications

Organizations	(Thousands of \$)				
	1977	1978	1979	1980	1981
WFP	85.0 <u>a/</u>	94.0 <u>b/</u>	-	-	-
UNDRO	-	2,326.0 <u>c/</u>	2,500.0 <u>c/</u>	2,600.0 <u>d/</u>	2,700.0 <u>d/</u>
IESA <u>e/</u>	325.0	370.0 <u>f/</u>	325.0	325.0	325.0
ESCAP	-	184.0 <u>g/</u>	184.0 <u>g/</u>	73.5 <u>h/</u>	73.5 <u>h/</u>
UNESCO	-	-	300.0	300.0	300.0
WHO	233.3 <u>i/</u>	279.9 <u>i/</u>	-	-	-
WMO	34.0 <u>j/</u>	43.0 <u>j/</u>	52.5 <u>j/</u>	190.0 <u>k/</u>	210.0 <u>k/</u>
UNEP	103.0	52.0	350.0 <u>l/</u>	160.0 <u>l/</u>	160.0 <u>l/</u>
Total:	780.3	3,348.9	3,711.5	3,648.5	3,768.5

a/ Included in \$40 million from the International Emergency Food Reserve.

b/ Included in about \$39 million from the International Emergency Food Reserve.

c/ Resources amount in total to \$2,826,700 in regular budget plus \$2.0 million in Trust Fund. Technical assistance sub-account of Trust Fund has a target of \$1.44 million for 1978-1979, but present indications are that it will not be reached.

d/ Resources amount to the total figure of \$5.31 million, which has been increased by 10 per cent for inflation over 1978-1979, but breakdown between Trust Fund and regular budget will probably be different.

e/ Based upon the average annual expenditure for disaster-related technical assistance from 1972 to 1978, it is projected that there could be expected average expenditure annually of \$325,000 from 1979 through 1982.

f/ Projected.

g/ These figures represent a total expenditure of \$368,000 for two years, broken down equally for each year.

h/ These figures represent a total expenditure of \$147,000 for two years, broken down equally for each year.

i/ WHO regular budget.

j/ Budget include secretariat services and staff requirements for Tropical Cyclone Project breakdown figures for 1980-1983 based on the proposals of the Secretary-General of WMO to its Congress.

k/ Data taken from the fourth status report on the implementation of the WMO Tropical Cyclone Project.

l/ Planned.

Chapter III

SUPPORTING MEASURES (budget line 03)

A. ENVIRONMENTAL EDUCATION (budget sub-line 0305)

1. Problem addressed

141. The extent to which public concern about environmental problems and issues can be effectively reflected in national policy decisions depends, to a large extent, upon the way in which the perception and level of awareness of each individual citizen are sharpened through the provision of basic knowledge about the environment, the function of its ecosystems, and man's interdependence with nature. Education is a cornerstone to that knowledge base, and is therefore a necessary condition for the development and application of solutions to these problems and issues in order to ensure the maintenance of environmental quality for sustainable use by future generations.

2. Authority

142. The objectives, strategies and 1982 goal for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 32-33:

3. Progress report

143. The thematic joint programming (Paris, 21-23 June 1978) on the follow-up of the Tbilisi Intergovernmental Conference on Environmental Education provided a framework for system-wide programming in environmental education, with priority being given to: the integration of environmental education into the different levels, types and modalities of formal and non-formal education; training and retraining of educational personnel; the development of instructional materials; and research and experimentation in environmental education (FAO, ILO, IMCO, WHO, WMO, UNDP, UNESCO, UNEP, UNFPA, ESCAP/APDI and other organizations). In addition, the following developments have taken place:

(a) The twentieth General Conference of UNESCO, held in Paris, from 24 October to 28 November 1978, adopted a general resolution and approved the workplan and budget for the 1979-1980 biennium concerning the environmental education component of its medium-term plan, 1977-1982;

(b) The implementation phase (1978-1980) of the international environmental education programme (UNESCO-UNEP) incorporates activities recommended by the Tbilisi Intergovernmental Conference on Environmental Education;

(c) Several Governments, including those of Colombia, Indonesia and Venezuela, have adopted legislation (1978) for incorporating the environmental dimension into education;

(d) The sixth general programme of WHO (1978-1983) focuses on education and training of technicians and engineers in connexion with the International Drinking Water Decade (WHO, World Bank);

(e) As part of an educational experiment, the relationship between primary health care and rural water supplies was examined in five case studies commissioned in developing countries (WHO, UNICEF, Governments);

(f) A regional workshop of African Universities (3-9 December 1978) produced a framework for the development of programmes in environmental education, training and research (AAU, CS/CFTC, ACCT, UNEP).

4. Urgent needs

144. The urgent needs in relation to environmental education are for:

(a) Establishment of effective means within and outside the United Nations system for the regular collection and exchange of information and experience on environmental education activities;

(b) Provision for fellowships in environmental education for personnel from developing countries.

5. Work plan

Objectives	Activities
<p><u>Goal 16 for 1982</u></p> <p>Advanced implementation of the plan of action for environmental education and the full functioning of the programme activity centre on environmental education and training</p> <p>(i) To effect a rapid and systematic development of environmental education on a global basis</p>	<p>1979. International programme in environmental education (UNESCO, UNEP): follow-up to thematic joint programming</p> <p>1979. Evaluation of the programme activity centre for environmental education and training in Africa, and follow-up as appropriate (UNEP)</p> <p>1980. International seminar on environmental education: interdisciplinary approaches (UNESCO, UNEP)</p> <p>1981. System-wide environmental education programme (all relevant organizations)</p> <p>1982. Development of environmental education curricula for schools, out-of-school youths and adults (UNESCO, FAO, WHO, ILO, UNICEF)</p> <p>1982. Development of teacher-education programme incorporating environmental education for colleges of education and training institutions</p> <p>1982. In-service workshops for practising teachers and other educational personnel: in-service environmental education model(s) for teachers (UNESCO)</p> <p>1982. Publication of appropriate teaching and instructional materials for environmental education (UNESCO, ILO, FAO, WHO)</p>

Objectives	Activities
<p>(II) To develop and support programmes in education to create environmental awareness at policy decision-making levels in the public and the private sectors in all aspects of development</p>	<p>1982. Publication of directories of personnel, programmes, institutions, periodicals, bibliography, environmental education case and comparative studies, a multilingual glossary, an environmental education source book and a teachers' guide (UNESCO)</p> <p>1982. Research studies and experiments to refine environmental education concepts, content and methodology (UNESCO, WHO, UNICEF)</p> <p>1982. Guidelines for evaluation in environmental education (UNESCO)</p> <p>1979. Courses on the environmental dimension in development policies and plans (ECLA)</p> <p>1980. Preparation of curriculum for the environmental education of economists (UNESCO, UNEP)</p> <p>1980. Seminars on Integrated approaches to local development and short-term regional courses for decision-makers, planners and administrators at regional level (FAO)</p> <p>1980. Introduction of environmental management courses at ILO-affiliated institutions: consolidated environmental management education programmes in labour studies (ILO)</p> <p>1982. Translation of programme materials, including state of the environment reports and other technical papers on environmental themes, for use in teaching and instruction at various educational levels (UNESCO, ILO, WHO, FAO, UNEP)</p> <p>1983. Strengthening of programmes for workers' education, rural/urban development, etc.: curricula for rural planners, industrial and construction engineers and environmental education modules for vocational courses (ILO)</p>
<p>(III) To provide opportunities through the education necessary for all countries to participate in appropriate parts of the environment programme in an informed manner as equal partners</p>	<p>1982. Updating and expansion of the international environmental education network, and continuation of the newsletter <u>Connect</u> (UNESCO, UNEP)</p>

Objectives	Activities
<p>(iv) To assist in the establishment of education systems which will help Governments to include the environmental dimension in policies, programmes and projects</p> <p>(v) To stimulate the rapid development of non-formal education for urban and rural populations</p>	<p>1980. Publication of course materials for air pollution meteorology (WMO)</p> <p>1980. Preparation of programme materials on the application of nuclear technology (IAEA)</p> <p>1980. In-service education of field-staff in environmental issues related to agricultural land development programmes (FAO)</p> <p>1982. Technical assistance missions to help incorporate the environmental dimension in national education programmes (UNEP, UNESCO)</p> <p>1980. Development of non-formal education programmes for young boys and girls to encourage community participation in development activities and of guidelines for youth education on the environmental aspects of community development (UNICEF, UNESCO, UNEP)</p> <p>1982. Preparation of literacy programmes developed around environmental themes (UNESCO, UNEP)</p> <p>1982. Preparation of vocational education modules and programmes with environmental content (ILO, UNESCO, UNEP)</p>

6. Budgetary implications

Organizations	(Thousands of \$)				
	1977	1978	1979	1980	1981
FAO	-	-	-	-	-
ILO	-	50.0 ^{a/}	50.0 ^{a/}	50.0 ^{a/}	50.0 ^{a/}
IMCO	-	31.0 ^{b/}	31.0 ^{b/}	-	-
UNESCO	364.0 ^{c/}	-	690.0	665.0	710.0
UNU	-	-	-	-	-
WHO	-	250.0	250.0	250.0	250.0
WMO	12.0	-	12.5 ^{d/}	12.5 ^{d/}	-
UN/OETO	-	-	6.0	-	-
ESCAP	-	200.0 ^{e/}	200.0 ^{e/}	300.0 ^{f/}	300.0 ^{f/}
ECLA ^{g/}	-	63.95 ^{g/}	63.95 ^{g/}	-	-
UNEP	2,400.0 ^{h/}	1,081.0	1,450.0 ^{i/}	1,470.0 ^{i/}	1,300.0 ^{i/}
Total:	2,776.0	1,675.9	2,753.4	2,747.5	2,610.0

^{a/} These figures represent a total expenditure of \$200,000 for four years, broken down equally for each year.

^{b/} These figures represent a total expenditure of \$62,000 for two years, broken down equally for each year.

^{c/} Includes environmental education under MAB and for engineers.

^{d/} These figures represent a total expenditure of \$25,000 for two years, broken down equally for each year.

^{e/} These figures represent a total expenditure of \$400,000 for two years, broken down equally for each year.

^{f/} These figures represent a total expenditure of \$600,000 for two years, broken down equally for each year.

^{g/} These figures represent a total expenditure of \$127,900 for two years, \$61,100 from the regular budget and \$66,800 from extrabudgetary sources, broken down equally for each year.

^{h/} Includes training.

^{i/} Planned.

B. ENVIRONMENTAL TRAINING
(budget sub-line 0306)

1. Problem addressed

145. Manpower development for skills connected with the tasks of environmental assessment and environmental management is an essential component of the pursuit of environmental quality. Training components should be systematically incorporated in all environmental programmes and activities, and available resources deployed to meet the needs of all countries and particularly the developing ones.

2. Authority

146. The objectives, strategies and goal for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 33-35.

3. Progress report

147. The following developments have taken place since the Governing Council's sixth session:

(a) Training courses for environmental planners and decision-makers were conducted in Africa, Asia and the Pacific 1/ and West Asia (IDEP/ENDA, ESCAP/APDI, ALECSO);

(b) Integrated training for environmental management (CIFCA, 2/ CEFIGRE, 3/ CEI 4/ and the international training courses in environmental management at Urbino 5/ have produced new programmes and increasing numbers of trained specialists (UNESCO, UNEP, FAO, Governments of France, Italy and Spain);

(c) Support was provided for the participation of specialists from developing countries in post-graduate training courses for integrated surveys (Netherlands), environmental management (France), natural resources research and land evaluation (United Kingdom), soil science (Belgium), soil science and plant biology (Spain) and limnology (Austria) (UNESCO);

(d) Training components were reflected in 50 projects approved as of end of January 1979 (UNEP); study tours and regional seminars are reported on in the appropriate sections of this document;

(e) The workshop referred to in paragraph 143 (f) is also relevant to training.

1/ FP/0306-78-02; UNEP/FUND/PROJECTS/A.133.

2/ FP/0301-75-08 and FP/0301-77-09; UNEP/FUND/PROJECTS/P.9 and 65.

3/ FP/1107-77-01; UNEP/FUND/PROJECTS/A.75.

4/ FP/0301-77-05; UNEP/FUND/PROJECTS/A.80.

5/ FP/0301-76-02.

4. Urgent needs

148. The urgent needs in relation to environmental training are for:

- (a) Improved evaluation of the effectiveness of training programmes;
- (b) Development of manuals and guidelines, for use in training programmes, on taking environmental considerations into account in development planning.

5. Work plan

Objectives	Activities
<p><u>Goal 16 for 1982, quoted in the Work plan for environmental education, is also relevant to environmental training</u></p> <p>(i) To provide the specialized training necessary for technicians and specialists involved in various tasks connected with environmental education and training, environmental assessment and environmental management</p> <p>(ii) To provide the knowledge and skills required through vocational education and training, in order to generate environmental awareness and stimulate the capacity for appropriate environmental action among rural and urban populations</p>	<p>1981. Specialized international and regional training courses in environmental management, ecological sciences and related fields (UNESCO, UNEP)</p> <p>1981. Programmes for key personnel engaged in prevention, control and abatement of pollution (IMCO, WMO, WHO, UNEP)</p> <p>1981. Publication of guidelines for incorporating the environmental dimension in training programmes (UNESCO, UNEP)</p> <p>1982. Environmental training in engineering hydrology, meteorology, agriculture, health, etc. (UNESCO, WMO, ILO, FAO, WHO, UNEP)</p> <p>1982. Publication of an environmental training directory (ILO, UNESCO, UNEP)</p> <p>1981. Development of non-formal, on-the-job and out-of-school vocational training programme through the Turin Centre (ILO)</p>

Objectives	Activities
(iii) To establish and maintain appropriate mechanisms and procedures for the effective co-ordination, harmonization and development of environmental training programmes	1980. Formulation of joint programmes and co-ordination of environmental training programmes (UNEP and relevant organizations) 1982. Report on environmental training in the United Nations system (UNEP and all relevant organizations)

6. Budgetary implications

Organizations and Governments	(Thousands of \$)				
	1977	1978	1979	1980	1981
ILO	-	-	111.3	-	-
UNESCO	35.0	23.0	-	-	-
IDEP	34.0	74.0	76.0	-	-
IMCO	-	-	-	-	-
ENDA	133.7	815.0	926.0	-	-
Washington University	28.2	-	-	-	-
CEI	72.5	-	200.0	200.0	200.0
APDI	72.0	36.0	342.0	342.0	-
Government of the German Democratic Republic	40.0	63.2	-	-	-
Government of Italy	125.1	126.6	-	-	-
Government of Spain	1,280.0	1,137.4	1,157.4	1,153.5	-
World Youth Congress on Food and Development (WYCFD)	-	279.0	-	-	-
Others	1,140.3	557.3	315.6	315.6	-
UNEP	1,188.0	836.0	800.0 ^{a/}	1,000.0 ^{a/}	900.0 ^{a/}
Total:	4,148.8	3,947.5	3,928.3	3,011.1	1,100.0

^{a/} Planned.

C. INFORMATION
(budget sub-line 0303)

1. Problem addressed

149. The generation and dissemination of information is an integral part of virtually all components of the environment programme, and those aspects directly relevant to each chapter are included in the progress report and work plan portions of those chapters. This section outlines UNEP's activities undertaken to fulfil its public information mandate, which includes information activities of broad relevance to the programme.

2. Authority

150. The objectives, strategies and goal for this component of the programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 35-36.

3. Progress report

151. The following developments have taken place since the Governing Council's sixth session:

(a) Regional information officers have been appointed in UNEP Regional Offices for Africa, Asia and the Pacific, Latin America and West Asia, as well as in the New York Liaison Office and the Regional and Liaison Office in Geneva; 6/

(b) Working links have been established with seven regional information leverage centres;

(c) Eight issues of UNITERRA have been published, including a combined issue for May/June 1978;

(d) Feature articles were distributed on environment and development, human settlements, world conservation strategy, solar energy and other issues;

(e) Three issues of Mazingira 7/ were published on, inter alia, village development and appropriate technology (UNEP, Pergamon Press);

(f) For World Environment Day (June 1978), 9,000 Media Packs based on the 1978 state of the environment report, 8,000 NGO resource packs on the theme "Environment and development", and radio tapes of interviews on the four topics of the 1978 state of the environment report - chemicals and the environment, malaria, use of agricultural and agro-industrial residues and energy conservation - were produced and distributed to the mass media and NGOs and a 12-minute television film "Environmental Disease - Malaria" was broadcast by some 120 television stations throughout the world (UNEP, ELC, Media);

(g) The above film, together with two previous ones on firewood and water, received top TV film awards (UNEP). The films are, on an experimental basis, being sold or rented out to educational institutions in Canada and the United States of America;

6/ FP/0303-77-03; UNEP/FUND/PROJECTS/A.8.

7/ FP/0303-76-02; Report to Governments, No. 6.

(h) A one-hour special on "Water", drawing on the 1976 World Environment Day film "Water - Vital Resource for Life" is presently under preparation by the Public Broadcasting Service, a non-commercial TV network in the United States of America;

(i) Articles have been carried in specialized scientific journals such as New Scientist and Nature;

(j) The World Environment Report has been published fortnightly by the United Nations Association of the United States of America, with UNEP support;

(k) Financial and information support has been given for coverage of environmental issues in Development Forum;

(l) A picture library has been established with about 3,000 black and white photographs, about 1,000 colour slides and about 70 colour pictures enlarged for exhibit purposes. Sets of most of these have been prepared for the UNEP regional offices as a nucleus for their own picture libraries. Some slide tapes based on this material have been prepared. A catalogue has been prepared in three languages, and distributed;

(m) A catalogue of 80 films has been prepared and a regular loan service makes them available within Kenya and other parts of Africa. UNEP has Third World TV rights and non-commercial rights to a BBC film of the Gulong Mulu tropical forest in Sarawak (see also para. 95 (i) above; also relevant to para. 75);

(n) In addition to regular radio service interviews, a series of thirteen 15-minute programmes are being co-produced with the Voice of Kenya and broadcast weekly. Some of these will be linked to the UNEP/UNDP/Government of Kenya Eco-Development Project (see para 106 (b) above);

(o) Multimedia packages - slides, photographs, films, graphics, audio cassettes, printed material - are being assembled for use in information and training;

(p) A seminar on environment and development was held for Africa broadcasting executives in September 1978 (UNEP, URTNA, UNESCO, UNICEF). A number of broadcasters agreed to receive and use UNEP materials in their programmes, especially for World Environment Day. Another seminar is planned for mid-1979 on communication, environment and development, in connexion with the Kenya eco-development project (see para. 106 (b) above) (UNEP, International Institute of Communications);

(q) A publication plan for 1979, covering all substantive units of the programme and the Information Division, has been drawn up. UNEP exercises control over editorial policy and copyright of the publications planned, which will be issued as UNEP publications or joint ventures, or licensed out to commercial publishers;

(r) A contract has been made with Inter-Press Service for the use of its 200 correspondents to increase the flow of environmental information to and between developing countries;

(s) UNEP has provided support for the "Earthscan" environmental media organization to provide features and briefings which are used by the mass media, including a press briefing for scientists from developing countries on the world conservation strategy (see para. 95 (a) above).

4. Urgent needs

152. The urgent needs in relation to information are for:

- (a) Development of stronger working relations with film-makers, broadcasters and journalists in all countries;
- (b) Strengthening of the radio element of the audio-visual programme;
- (c) Establishment of concrete programmes for co-operation with specialized agencies of the United Nations system in the area of audio-visual materials.

5. Work plan

Objectives	Activities
<p>To increase consciousness and appreciation of environmental matters through support for national programmes among both particular special interested groups and the masses and to involve them in relevant action by preparing an information process appropriate to both environmental conditions and media requirements</p> <p><u>Goal 17 for 1982</u></p> <p>Established procedures for effective communication with Governments and information to the public at large</p>	<p><u>Establishment of liaison with media</u></p> <p>1979-1982. Creation of regional information networks - New York, Geneva, Mexico City, Bangkok, Nairobi and Beirut</p> <p>1979-1982. Co-operative agreements with the following leverage centres (UNEP): Environment Training Programme (ENDA), Latin American Association of Development Journalists, New Internationalist, Press Institute of India, Press Foundation of Asia, Foundation for Applied Ecology, Arab Centre for Reconstruction, Population and Development</p> <p><u>Briefings and training</u></p> <p>1979. Training courses for broadcasters - Africa</p> <p>1979-1980. Increased public awareness of the World Conservation Strategy (WWF/IUCN)</p> <p>1979-1982. Training courses for broadcasters in other regions</p> <p>1980. International TV workshop in the Netherlands and regional TV workshops in Asia and Latin America</p> <p><u>World Environment Day activities</u></p> <p>Continuing. Activity focused on annual UNEP state of the environment topics</p> <p>Annually. Information kit for World Environment Day</p> <p>1979-1982. Develop greater involvement of NGOs in World Environment Day activities (ELC)</p>

Objectives	Activities
	<p><u>Provision of information to NGOs</u></p> <p>1979-1982. Development of NGO seminar programme: Emphasis on youth, 1979; Latin American regional seminar, 1980; Arabic-speaking seminar, 1980; CMEA regional seminar, 1981; Africa regional seminar, 1981; Asia/Pacific regional seminar, 1982</p> <p><u>Co-ordination of United Nations information activities</u></p> <p>1979. Information support for the United Nations Conference on Science and Technology for Development - features and press releases (Earthscan)</p> <p>1979. Information support on the World Climate Conference (WMO)</p> <p>1979. Television film on the Child and the Environment and feature articles, support for NGO world poster contest (UNICEF, ELC)</p> <p>1979. Booklets on Environment and health and Industry and Environment, articles in "Report", and dissemination of booklet "Environment and Development" in French and Spanish (World Bank)</p> <p>1979. Distribution of print and audio-visual material on nuclear energy and the environment. Distribution of abstracts through the International Nuclear Information System (INIS) and increased awareness of environmental impacts of nuclear energy (IAEA)</p> <p>1979. Environmental information material to be carried in <u>Development Forum</u> (OPI)</p> <p>1979-1980. Increased public knowledge of working conditions and the environment - press releases and features (ILO)</p> <p><u>Implementation of communications component in Fund projects</u></p> <p>1979. Experiments with innovative use of audio-visual programmes using project results</p> <p>1979. Information support for environmental aspects of World Youth Conference on Food and Development</p> <p>1979. Multimedia information packages on Seas and Desertification</p> <p>1979. Radio programmes on environment and development</p>

Objectives	Activities
	<p>1979-1980. Dissemination of information on environmental issues through publications programmes: <u>Mazingira</u>, popular book series, World Environment Day materials, press releases, feature articles; information on actions taken since the Desertification Conference (Worldwatch)</p> <p><u>Technical assistance</u></p> <p>1979-1982. Expansion of TV and radio co-production audio-visual programmes, exhibits and briefing centre; development of a comprehensive audio-visual programme; establishment of a broadcasting network; expansion of audio-visual action in Asia and Latin America</p> <p><u>Development of multilingual publications programme</u></p> <p>1979-1982. Develop co-operating agency publishing; establish network of commercial publishers; develop commercial publishing in languages other than English, and create vernacular subsidy-publishing in developing countries. Publication of <u>Mazingira</u>, <u>Uniterra</u>, annual review, <u>Report to Governments</u> (UNEP)</p>

6. Budgetary implications

Organizations	(Thousands of \$)				
	1977	1978	1979	1980	1981
ECLA	-	20.0	-	-	-
UNESCO			80.0	100.0	120.0
UNEP	597.0	1,654.0	2,030.0 ^{a/}	2,500.0 ^{a/}	2,250.0 ^{a/}
Total:	597.0	1,674.0	2,110.0	2,600.0	2,370.0

^{a/} Planned.

D. TECHNICAL ASSISTANCE
(budget sub-line 0302)

1. Problem addressed

153. To assure maximum impact at the national, regional and international levels in the implementation of the environment programme, every element of the programme should make provision for technical assistance, on request, to developing countries to increase their national abilities to deal with environmental problems and to enable them to participate effectively in environmental activities at the regional and international levels.

2. Authority

154. The objectives, strategies and 1982 goal for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 36-37.

3. Progress report

155. The following developments have taken place since the Governing Council's sixth session:

(a) Technical assistance was provided upon request to 21 countries in Africa, Asia and the Pacific, West Asia and Latin America through consultancies 8/ amounting to 31 man-months (UNEP);

(b) Advisory services in a variety of fields, for example conservation and wildlife, human settlements, integrated approach to environment and development, were provided by the regional advisory teams 8/ to Africa, West Asia, Latin America and Asia and the Pacific (UNEP);

(c) Group training in various fields of the environment benefited 138 individuals from the developing regions;

(d) Environmental co-ordination units 9/ to promote and co-ordinate environmental activities of the five regional commissions were established (June 1978 to January 1979) and staff recruited (UNEP, ECA, ESCAP, ECLA, ECE, ECWA).

4. Urgent needs

156. The urgent needs in relation to technical assistance are for:

(a) An increase in UNEP's capacity to respond quickly, in co-operation with relevant members of the United Nations system, to technical assistance requests in various areas of environmental activities;

(b) Co-operation of Governments to make the clearing-house facility an effective mechanism.

8/ FP/0302-75-12 (regional advisory teams' project);
UNEP/FUND/PROJECTS/P.13.

9/ FP/0302-77-02 (ECA); UNEP/FUND/PROJECTS/A.39; FP/0302-77-03 (ESCAP);
UNEP/FUND/PROJECTS/A.40; FP/0302-77-04 (ECLA); UNEP/FUND/PROJECTS/A.66;
FP/0302-78-02 (ECE); UNEP/FUND/PROJECTS/A.121; FP/0302-79-01 (ECWA); Report
to Governments, No. 18.

5. Work plan

Objectives	Activities
<p>To make it possible for all countries to</p> <p>(a) participate fully in regional, transnational and global environment-related programmes;</p> <p>(b) manage their own environment in accordance with their own aspirations and needs, in harmony with their development objectives and any international agreements to which they are parties</p>	<p>December 1979. Provision of at least 48 man-months of <u>ad hoc</u> consultancies <u>a/</u> in environmental matters in Africa, Asia and Latin America (UNEP)</p> <p>1979. Provision of advisory services through regional advisory teams <u>a/</u> in developing regions (UNEP)</p> <p>1979. Group training courses, seminars <u>b/</u> (UNEP)</p> <p>1980. Initial operations of a clearing-house facility (UNEP, donor organizations and Governments)</p> <p>1982. Fully operational clearing-house facility (UNEP, donor organizations and Governments (fulfilment of goal 18 for 1982)</p>

a/ FP/0302-75-12; UNEP/FUND/PROJECTS/P.13.

b/ FP/0302-77-02; UNEP/FUND/PROJECTS/A.39.

6. Budgetary Implications

Organizations and Governments	(Thousands of \$)				
	1977	1978	1979	1980	1981
ECA	1.7	41.8	77.0	43.2	-
ECE	-	85.0	185.0	94.0	-
ECLA	-	46.0	125.4	75.0	-
ECWA	-	-	88.8	88.3	-
ESCAP	-	39.1	70.1	25.1	-
WHO	-	16.0	17.6	29.6	-
Governments	60.6	774.8	724.9	714.3	-
UNEP	1,535.3	1,240.0	2,590.0 ^{a/}	2,500.0 ^{a/}	2,250.0 ^{a/}
Total:	1,597.6	2,242.7	3,878.8	3,569.5	2,250.0

a/ Planned.

Chapter IV

ENVIRONMENTAL MANAGEMENT INCLUDING ENVIRONMENTAL LAW (budget line 10)

A. ENVIRONMENTAL LAW (budget sub-line 1002)

1. Problem addressed

157. Environmental law is an integral part of environmental management. While a number of conventions and protocols at the regional and international levels have been concluded in the field of the environment, they have received neither adequate participation by States entitled to be parties nor effective enforcement or implementation by those which have become parties. Moreover, in a number of environmental areas, national legislation as well as regional and international instruments are still required to back up environmental management efforts.

2. Authority

158. The objectives, strategies and goals for this component of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 38-39.

3. Progress report

159. The following developments have taken place since the Governing Council's sixth session:

(a) The General Assembly at its thirty-third session considered the legal principles developed by the Intergovernmental Working Group of Experts on Natural Resources Shared by Two or More States. The Assembly invited the Secretary-General to transmit the report of the Working Group to Governments for study and comment and to report thereon, taking into account also other significant information with a view to enabling the Assembly to take a decision at its thirty-fourth session;

(b) The register of international conventions and protocols in the field of the environment has been further updated (see UNEP/GC/INFORMATION/5/Supplement 2).

4. Work plan

Objectives	Activities
(i) To contribute towards the development and codification of international law, to meet new requirements generated by environmental concerns and by the	See Outer limits: weather modification (para. 48)

Objectives	Activities
<p>international strategy in the field of the environment, based particularly on the Stockholm Declaration</p> <p>(ii) To facilitate co-operation among States for the development of international law regarding responsibility, liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of States to areas beyond the limits of their jurisdiction in accordance with Principles 21, 22, 23 and 24 of the Stockholm Declaration</p> <p><u>Goal 19 for 1982</u></p> <p>Achievement of wide acceptance and application of existing and future international conventions and protocols in the field of the environment</p> <p><u>Goal 20 for 1982</u></p> <p>Agreement on the principles which should guide States in their interrelations in respect of shared natural resources, the problems of liability and compensation for</p>	<p>March 1979. Elaboration by the Working Group of governmental experts on environmental law, at its third session, of guidelines on certain aspects of control of pollution and other environmental damage from off-shore mining and drilling and possibly agreement on priority areas for further work of the Working Group (UNEP, IMCO, Governments)</p>

Objectives	Activities
<p>pollution and environmental damage, weather modification and risks to the ozone layer, and codification of those principles into international treaties</p> <p>(iii) To contribute towards the development of environment law at the national and regional levels</p>	<p>Annually. Updating of the register of conventions (UNEP)</p> <p>1979. Dissemination of reports on analysis of selected conventions and protocols; research on the difficulties experienced by Governments in becoming parties to them or implementing them (UNEP, regional commissions)</p> <p>1979. Development and follow-up of legal components of the action plans on regional seas (see work plan on regional seas)</p> <p>End 1979. Preparation of a portion of handbook on environmental machineries and legislation (see UNEP/GC.6/7, para. 150) (UNEP)</p> <p>1979-1980. Preparation of university teaching materials on the basis of surveys (UNESCO, FAO, UNEP, CIFCA)</p> <p>1980. Publication of handbook. Collection of national legislation in the environment field in the Asia and Pacific region (ESCAP)</p> <p>1980-1981. Regional seminars and Governmental expert meetings for ECA and ECLA regions to develop specific guidelines for the drafting of national legislation in the field of the environment (regional commissions)</p>

5. Budgetary implications

Organizations	(Thousands of \$)				
	1977	1978	1979	1980	1981
ESCAP	30.5	20.3	-	-	-
IJO	7.5	37.0	-	-	-
IALS	-	10.4	-	-	-
UNEP	219.6	107.0	400.0 ^{a/}	250.0 ^{a/}	270.0 ^{a/}
Total	257.6	174.7	400.0	250.0	270.0

^{a/} Planned.

B. ENVIRONMENTAL MANAGEMENT
(budget sub-line 1001)

1. Problem addressed

160. Environmental concerns are receiving increasing attention among Governments, regional and international intergovernmental and non-governmental organizations. Easily applicable guidelines and methodologies are therefore required for the integration of environmental considerations in decision-making, planning and implementation process as these are still at an early stage of development. Additional efforts are thus required to identify and synthesize results of research and experience for translation and adaptation into environmental management advice and promote its wider use.

2. Authority

161. The objectives, strategies and 1982 goal for this functional task of the environment programme, as approved by the Governing Council, are given in UNEP/GC/INFORMATION/1/Rev.2, pages 39-41.

3. Progress report

162. As environmental management contributes to other sections of the environment programme, many relevant inputs are to be found in other parts of this document.

(a) The Caribbean 1/

163. An interagency meeting on the Caribbean Environmental Management Programme held in Mexico City (August 1978) agreed on the terms of reference and assignment of responsibilities for the preparation of overview studies on the state of pollution in the Caribbean, oil pollution, a case study; environmental health; human settlements; coastal areas of the Caribbean environment and development including tourism; agriculture and fisheries in the wider Caribbean area; and energy and the environment. These will serve as background for consideration of the draft Action Plan by a meeting of Government designated experts contemplated for the summer of 1979 (ECWA, UNEP with participation of UN/IESA, UNIDO, UNDP, UNFPA, ISO, FAO, IOC/UNESCO, PAHO/WHO, WMO, IMCO and OAS, IDE, CCA and IIED as observers);

(b) South-west Pacific 2/

164. A technical meeting held at Noumea, New Caledonia, in June 1978 made recommendations for the preparation of a regional action plan for the South Pacific regional environment programme (ESCAP, SPC, SPEC, UNEP).

4. Urgent needs

165. Development of easily understandable methodologies and guidelines for use in developing countries.

1/ Activities are directly related to the regional seas programme.

2/ Ibid.

5. Work plan

Objectives <u>a/</u>	Activities
<p>(i) To ensure incorporation of environmental criteria in the process of economic evaluation and management</p> <p><u>Goal 14 for 1982</u></p> <p>Adoption and implementation of action plans for each of the regional seas covered by UNEP programmes</p>	<p>1979. Environmental management case studies <u>b/</u> (UNEP, Poland)</p> <p>1980. Dissemination of experience on Environmental Management <u>c/</u> (UNEP, CTM, Government of Poland, FEEMA Brazil)</p> <p>1980. Development of guidelines for the design and implementation of environmentally-sound development projects</p> <p>See under Environment and development</p> <p>Promotion of action plans on environmental management</p> <p><u>The Caribbean</u></p> <p>April 1979. Overview studies completed (IMCO, WHO, FAO, UNDIESA, UNESCO, UNEP, ECLA, CEPAL, PAHO, WMO, IUCN, IIED, IOCARIBE, OAS)</p> <p>June 1979. Second meeting of Advisory Panel and meeting of government-nominated experts (ECLA, UNEP)</p> <p>Early 1980. Third meeting of Advisory Panel (ECLA, UNEP)</p> <p>March 1980. Approval of Caribbean Action Plan (Governments with participation of all relevant organizations)</p> <p>1980-1982. Implementation of Action Plan (ECLA, UNEP, Governments)</p>

a/ Several other objectives are addressed under integrated approach to environment and development, including environment and development, environmentally-sound and appropriate technologies and environmental education above.

b/ FP/1001-78-01; UNEP/FUND/PROJECTS/A.143.

c/ FP/1001-78-02; UNEP/FUND/PROJECTS/A.116.

Objectives	Activities
<p><u>Goal 21 for 1982</u></p> <p>Development of the capacity to provide comprehensive and practical advice on the implementation of environmental management, based on the outcome of relevant work throughout the programme <u>d/</u></p>	<p><u>South West Pacific</u></p> <p>December 1979. Completion of draft environmental management programme (ESCAP, SPEC, SPC, UNEP)</p> <p>Early 1980. Review of draft action plan by government-nominated experts (UNEP)</p> <p>Late 1980. Intergovernmental meeting to discuss and adopt action plan (UNEP, Governments)</p> <p>1981-1983. Implementation of Action Plan</p> <p>Continuing. Incorporation of lessons learned through programme activities into the concepts and practice of environmental management; provision of advice to Governments (UNEP)</p>

d/ Many other activities throughout the environment programme contribute to the implementation of this goal.

6. Budgetary implications

Organizations and Governments	(Thousands of \$)				
	1977	1978	1979	1980	1981
Mekong Secretariat/ESCAP	400.0	400.0	-	-	-
IIED	21.1	-	-	-	-
CEPAL	5.8	17.4	4.3	-	-
ICSU/SCOPE	11.7	5.8	-	-	-
CTM	-	105.0	315.1	78.8	-
Government of Poland	-	3.0	3.0	-	-
UNEP	287.2	387.0	700.0 ^{a/}	250.0 ^{a/}	270.0 ^{a/}
Total	725.8	918.2	1,022.4	328.8	270.0

^{a/} Planned.

Annex II

SUGGESTED ACTION BY THE GOVERNING COUNCIL

The Governing Council may wish to consider a decision along the following lines:

I

1. Notes (with approval) the Executive Director's concentration, in the presentation of the programme document, on results of the implementation of the programme, and the new presentation of the Progress report and Work plan sectors;
2. Notes with satisfaction the contributions made by organizations within the United Nations system to improving the content of the programme document;
3. Calls upon organizations of the United Nations system, Governments and Intergovernmental and non-governmental organizations to continue to assist the Executive Director in preparing the programme document, and in particular reiterates its call upon United Nations organizations to contribute concrete budgetary data regarding their plans within those sections of the programme selected for detailed reporting at Governing Council sessions;

II

1. Approves the Executive Director's proposals of new and revised objectives and strategies for the following parts of the programme:

- Environmental data;
- Human settlements;
- Integrated approach to environment and development including use of natural resources;
- Environmentally-sound and appropriate technologies;
- Industry and environment;
- Energy;
- Natural disasters;

2. Approves the activities recommended for support from the Environment Fund;
 3. Notes the Executive Director's plans to achieve the goals for 1982, and approves his proposed amendment to goal 15 on natural disasters;
 4. Endorses the activities and associated action which have been taken or are proposed in the Executive Director's report on the environment programme, subject to any modifications or amendments implied in the present decision;
 5. Urges Governments to co-operate with the Executive Director to make the clearing-house facility for technical assistance effective;
 6. Requests the Executive Director, in implementing the environment programme, to take into account the views expressed by the Governing Council in the course of its consideration of the programme.
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