



United Nations
Environment
Programme



Distr.
GENERAL

UNEP/GC.9/6
6 March 1981

Original: English

GOVERNING COUNCIL
Ninth session
Nairobi, 13-26 May 1981
Item 6 of the provisional agenda

THE ENVIRONMENT PROGRAMME: MEDIUM-TERM PLAN 1982-1983

Report of the Executive Director

The purpose of the present medium-term plan is to enable the Governing Council to decide on the contents of the environment programme and the level of funding by UNEP for its implementation during the period 1982-1983, which bridges the gap between the end of the present Environment Fund biennium, in 1981, and the initiation of the system-wide medium-term environment programme in 1984.

Addendum I to this document will cover five regional seas whose work programmes will be approved by the pertinent intergovernmental meetings between March and April 1981.

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ABBREVIATIONS

ACC	Administrative Committee on Co-ordination
ALECSO	Arab League Educational Cultural and Scientific Organization
ASIL	American Society for International Law
BAPMoN	Background Air Pollution Monitoring Network
CCCC	Committee for Climate Changes and the Ocean
CCOL	Co-ordinating Committee on the Ozone Layer
CEC	Commission of the European Communities
CGIAR	Consultative Group on International Agricultural Research
CIFCA	International Centre for Training and Education in Environmental Sciences for Spanish-speaking countries
CIREN	International Centre for Research on Environment and Development
CMEA	Council for Mutual Economic Assistance
CNRET	United Nations Centre for Natural Resources, Energy and Transport
COSPAR	Committee on Space Research (ICSU)
COWAR	Scientific Committee on Water Research
CPPS	Permanent Commission for the South Pacific
DTCD	United Nations Department of Technical Co-operation for Development
ECA	Economic Commission for Africa
ECE	Economic Commission for Europe
ECG	Ecosystems Conservation Group
ECLA	Economic Commission for Latin America
ELC	Environment Liaison Centre
ETH	Eidgenossische Technische Hochschule
ESCAP	Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization of the United Nations
GATT	General Agreement on Tariffs and Trade
GEMS	Global Environment Monitoring System
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Pollution
GTS	Global Telecommunication System
IAEA	International Atomic Energy Agency

ABBREVIATIONS (continued)

IAEMS	International Association of Environmental Mutagen Societies
IALS	International Association of Legal Science
IARC	International Agency for Research on Cancer
IAWGD	Inter-Agency Working Group on Desertification
IBPGR	International Board for Plant Genetic Resources
ICEL	International Council on Environmental Law
ICIPE	International Centre for Insect Physiology and Ecology
ICRAF	International Council for Research In Agro-Forestry
ICRP	International Commission on Radiological Protection
ICRU	International Commission on Radiation Units and Measurements
ICSU	International Council of Scientific Unions
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
IFIAS	International Federation of Institutes for Advanced Studies
IGOSS	Integrated Global Ocean Station System
IITP	International Hydrological Programme
IIASA	International Institute for Applied System Analysis
IIED	International Institute for Environment and Development
IITA	International Institute of Tropical Agriculture
ILCA	International Livestock Centre for Africa
ILO	International Labour Organisation
IMCO	Inter-Governmental Maritime Consultative Organization
INFOTERRA	International Referral System for sources of environmental information
INTECOL	International Association of Ecology
IOC	Intergovernmental Oceanographic Commission
IOSH	International Occupational Safety and Health Programme
IPCS	International Programme on Chemical Safety

ABBREVIATIONS (continued)

IPIECA	International Petroleum Industry Environmental Conservation Association
IRPTC	International Register of Potentially Toxic Chemicals
ISSS	International Society of Soil Science
IUCN	International Union for the Conservation of Nature and Natural Resources
IUFRO	International Union of Forestry Research Organizations
IWC	International Wheat Council Whaling Commission
IWRB	International Waterfowl Research Bureau
KFAED	Kuwait Fund for Arab Economic Development
MAB	Man and the Biosphere Programme
MARC	Monitoring and Assessment Research Centre
MIRCENs	Microbiological Resources Centres
NGO	Non-Governmental Organizations
OAS	Organization of American States
OAU	Organization of African Unity
OECD	Organization for Economic Co-operation and Development
OPEC	Organization of Petroleum Exporting Countries
PAHO	Pan-American Health Organization
PIACT	Programme for the Improvement of Working Conditions and Environment
SCOPE	Scientific Committee on Problems of the Environment
SEDES	Société d'études pour le développement économique et social
SIDA	Swedish International Development Authority
SIL	Societas Internationalis Limnologiae
SPEC	South Pacific Bureau for Economic Co-operation
UNCTAD	United Nations Conference on Trade and Development
UNCTC	United Nations Centre on Transnational Corporations
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Co-ordination
UNEP/COM	USSR Commission for UNEP Affairs
UNESCO	United Nations Education, Scientific and Cultural Organization

ABBREVIATIONS (continued)

UNFPA	United Nations Fund for Population Activities
UNIC	United Nations Information Centre
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute for Training and Research
UNRISD	United Nations Research Institute for Social Development
UNISIST	Intergovernmental Programme for co-operation in the Field of Scientific and Technological Information
UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
UNSO	United Nations Sudano-Sahelian Office
UNU	United Nations University
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WCIP	World Climate Impact Studies Programme
WDC	World Data Centre on Micro-organisms
WFC	World Food Council
WFCC	World Federation of Culture Collections
WHO	World Health Organization
WMO	World Meteorological Organization
WWF	World Wildlife Fund
WWW	World Weather Watch

INTRODUCTION

1. Delegations to the Governing Council at its eighth session accepted the recommendation of the Executive Director that he submit to the Council at its ninth session two documents: the Programme Performance Report and a medium-term plan for 1980-1983. ^{1/} Since the substantive activities undertaken up to April 1980 were already reported in document UNEP/GC.8/5 and Add.2, and such activities thereafter to April 1981 are covered in document UNEP/GC.9/5 and its addenda, the Executive Director is presenting in this document a medium-term plan concentrating on the period 1982-1983, as the basis for the Council's consideration and approval of funds for the implementation of the programme during the biennium.

2. The table of contents of the medium-term plan is similar to that of the programme performance report, with the relatively slight changes explained below. The plan is divided into three chapters, each with a brief introduction: Environmental assessment, Environmental management and Supporting measures. Chapter I includes a new budget sub-line 1305, entitled Research and assessment, has been developed into a programme which inter alia, includes a number of items that were previously accommodated under other sub-lines, particularly GEMS and Outer limits. Activities traditionally presented under "Environmental management" as a separate section are covered under the relevant sections of chapter II, particularly that on the integrated approach to environment and development. Environmental law is, however presented as a separate programme in chapter II, where, as a management tool, it belongs, in support of such programmes as wildlife and protected areas and regional seas.

3. Since a number of intergovernmental meetings in the regional seas programme are taking place in March and April 1981, the proposed activities for the Mediterranean, the Kuwait Action Plan region, the Caribbean, West Africa and East Asian Seas are omitted in this document, and will be presented in an addendum after the meetings express their views on the proposed programmes of work.

4. Within the three chapters, the structure of the document is as follows: each programme has a brief background section which recalls, among others, the relevant recommendations contained in the Action Plan for the Human Environment adopted ^{2/} by the United Nations Conference on the Human Environment (Stockholm, June 1972) and, where applicable, the goals for 1982; an over-all objectives section, a section on activities to advance the objectives with Level Three and varying degrees of Level Two activities, ^{3/} and a budgetary implications section. The objectives stated are in some cases those approved by the Governing Council on various occasions and reproduced in document UNEP/GC/INFORMATION/1 and its two supplements. In other cases they give the essence of these texts, but do not reproduce them verbatim. Where possible, these condensed versions

^{1/} Report of the Governing Council on the work of its eighth session, Official Records of the General Assembly, Thirty-fifth session, Supplement No. 25 (A/35/25), para. 496.

^{2/} United Nations Publication, Sales No. E. 73. II. A. 14, chap. II.

^{3/} For a definition of Levels Two and Three, see Governing Council decision 20 (III) of 2 May 1975, sect. II, para. 1.

are time-limited, relating specifically to the period covered by the medium-term plan. In addition, objectives have been introduced under those parts of the outer limits programme for which they had not previously been stated. The Level Three activities are presented in the order of priority under the various objectives. In the UNEP-supported activities, emphasis will be given to those geared to achieving the goals for 1982 as well as to areas of concentration identified by the Governing Council at previous sessions. The "achievement indicators" given in the activities sections are not consistently presented at the same level: wherever possible, they relate specifically to individual strategy elements, but in some cases they relate to the attainment of the objective as a whole. The first two such indicators under objective I of INFOTERRA, for instance, are of this latter type.

5. The budgetary implications for UNEP and for those agencies that have supplied financial data on their regular or extrabudgetary programmes continue to be given for information. Proposed appropriation at the two-digit budget-line level that require action by the Governing Council are given in annex II.

6. The medium-term plan is designed in complete conformity with the imperative of the implementation of the International Development Strategy for the Third United Nations Development Decade, 4/ in the formulation of which UNEP took an active part. The new Strategy reflects the international concern to pursue environmentally sound development in its substantive, methodological as well as supporting aspects. The objectives of the Strategy reflect three fundamental tenets of UNEP's work over the years. The first is the imperative to steer development towards rational use of natural resources and prevention of early exhaustion of finite resources and overburdening of renewable resources; the second is the need to promote environmental considerations in developmental decisions and vice versa, over-all as well as in individual sectors, so that the pursuit of an improved quality of life including better health, nutrition and general well-being remains sensitive to the protection and improvement of the integrity and productivity of the environment; the third refers to the duty of all nations to avoid environmental degradation and give future generations the benefit of sound environmental management and to co-operate actively with one another, globally as well as regionally, to achieve this objective. The Strategy highlights the need to modify resource-wasteful patterns of development and lifestyles in all countries, and calls for special support by the international community to the developing countries, inter alia for their efforts to develop their own capacity to deal with problems of long-term development and the environment.

7. The present medium-term plan naturally reflects the concerns and objectives of environmentally sound development and the planning required for it at sectoral, national and sub-national levels. It also responds to the need for guidance, methodologies and instruments to enable countries to achieve these objectives, and for international co-operation in environmental protection and improvement. Although cross-references are not made in the present document to specific provisions of the new International

4/ General Assembly resolution 35/56 of 5 December 1980, annex.

Development Strategy, practically all aspects of the programme, including the supportive aspects such as education, training and information, may be seen as geared to fulfilling its objectives. For example, activities under desertification control and tropical forests are aimed at enhancing the long-term prospects of economic and social development in the areas concerned.

Chapter I

ENVIRONMENTAL ASSESSMENT: EARTHWATCH

A. INTRODUCTION

8. Of the 109 recommendations for action at the international level adopted at Stockholm in 1972, 82 dealt either entirely or in part with matters relevant to the assessment role of the environment programme. These 82 recommendations can be grouped into the following, often overlapping sets: "Evaluation and review: to provide the basis for identification of the knowledge needed and to determine that the necessary steps be taken"; "Research: to create new knowledge of the kinds specifically needed to provide guidance in the making of decisions"; "Monitoring: to gather certain data on specific environmental variables and to evaluate such data in order to determine and predict important environmental conditions and trends"; and "Information exchange: to disseminate knowledge within the scientific and technological communities and to ensure that decision-makers at all levels shall have the benefit of the best knowledge that can be made available in the forms and at the times in which it can be useful." ^{1/}

9. Thus, the assessment area of the environment programme (or "Earthwatch") was conceived as an internationally financed and co-ordinated global system of national facilities and services, which should study the interactions between man and the environment, provide early warning of environmental hazard, and determine the status of selected natural resources.

10. In general terms, therefore, Earthwatch is defined as a dynamic process of integrated environmental assessment by which environmental issues are identified and the necessary data gathered and evaluated to provide proper assessment statements forming the basis for (a) information to assist better understanding for effective environmental management; (b) future research; and (c) early warning of significant environmental changes. It is recognized, however, that the overlap between assessment and management in the present work of UNEP varies depending on the programmes. Ideally, for each programme to be effectively executed, the process of assessment should precede that of management. If the Governing Council concurs, this will be one of the major goals of the Executive Director in the future orientation of the programme.

11. An in-depth review of Earthwatch was examined at a thematic joint programming meeting held at Rome in October 1980. This will be followed by the development of a detailed assessment plan, including estimated costs. The objectives of Earthwatch are achieved through activities not only under budget line 13 (including the new sub-line 1305 on Research and assessment) but also under different budget lines such as 01 (Human settlements and human health) and 16 (Environmental data). This chapter is confined to a review of activities under lines 13 and 16. Line 01 is dealt with in chapter II below, since it is not formally linked to Earthwatch and contains a number of activities which are not directly related to assessment.

^{1/} United Nations publication, Sales No. E. 73. 11. A. 14, pp. 27-28.

B. MONITORING: THE GLOBAL ENVIRONMENT
MONITORING SYSTEM (GEMS)
(budget sub-line 1301)

1. Background

12. 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 variables that describe the state of renewable natural resources (soils, plants and animals), 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 it possible to assess the exposure to pollutants of man and other targets.

13. The GEMS Programme Activity Centre co-ordinates and catalyses specific environmental monitoring activities throughout the United Nations system, with the eventual aim of ensuring compatibility and comparability through accepted approaches to environmental monitoring that can be applied at the national, regional or global levels.

14. The concept of GEMS arose out of the deliberations of the Stockholm Conference. The Programme Activity Centre for GEMS was established in 1975, ^{2/} and currently manages or supports a number of projects through the specialized agencies. The relevant UNEP goal for 1982 ^{3/} calls for "an operational GEMS with results available, evaluated and published in the fields of health-related monitoring, climate-related monitoring, long-range transport of pollutants in Europe and resource monitoring" and its implementation is on schedule so far.

2. Objectives

15. The original objectives of the monitoring function within Earthwatch was quoted in paragraph 8 above. The approved objectives ^{4/} for GEMS now read as follows:

"To provide information necessary to ensure, in conjunction with evaluation and research, the present and future protection of human health, well-being ... and the wise management of the environment and its resources by:

"- Increasing quantitative knowledge of natural and man-made changes in the environment and of the impact of these on man's health and well-being;

"- Increasing understanding of the environment and, in particular, of how dynamic balance is maintained in ecosystems, as a basis for managing resources;

^{2/} Pursuant to decision 8 A (II) of 22 March 1974, Sect. II. 1 (a), para. 2.

^{3/} Decision 82 (V) of 25 May 1977, sect. VI; subsequently modified by decision 8/5 of 29 April 1980, sect. IV.

^{4/} UNEP/GC/INF/1/Rev.2.

"- Providing early warning of significant environmental changes (including natural disasters) in order that protective measures may be organized;

"- Making it possible to check the effectiveness of established regulatory mechanisms and to plan optimal technological development."

3. Activities to advance the objectives

(a) Renewable natural resource monitoring

Objectives

To develop and demonstrate data collection and analysing methodologies for repeated inventories of renewable natural resources at appropriate scales and intervals, tailored to national needs, in order to provide a basis for and assistance in formulating national resource management plans, conservation strategies, and, in the case of arid zones, plans of action to combat desertification.

To co-ordinate the acquisition, analysis, storage and dissemination of data on the state of natural resources at national, regional and global levels.

Strategies

Encouraging national resource monitoring projects by designing and in some cases providing partial finance for the establishment and operation of national ecological monitoring units. Expert reviews and consultations will be conducted to provide guidance in certain specialized subjects.

Development of standard comparable and compatible monitoring methodologies, and promotion of their use by providing advice at the national, regional and global levels and by establishing and managing a central data base on a selected set of resource variables.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Establishment of tropical forest monitoring projects in regions other than West Africa	1982-1983	FAO, UNEP	South-east Asia ongoing; South America to be initiated during period 1982/1983	Preliminary results end 1983
(ii) Pilot project for the inventory and monitoring of Sahelian pastoral ecosystems	1982-1983	FAO, UNEP	Ongoing: not to exceed June 1984	

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iii) Development of ecological monitoring projects for arid and semi-arid areas other than those in Africa	1982-1983	FAO, UNESCO, UNEP, Governments		Projects approved by Governments and initiated
(iv) Ecological monitoring of desertification in Bolivia	1982-1983	UNEP, Governments	Ongoing: initiation planned for 1981	Assessment statements on state and process of desertification in the study areas
(v) Ecological monitoring of desertification in Peru and Argentina	1982-1983	UNEP, Governments	Ongoing: assume funding obtained through the third session of the Consultative Group for Desertification control	
(vi) Publishing of ecological monitoring handbook	1982	UNEP		The handbook itself
(vii) Systematic monitoring of the status of plant and animal species	1982-1983	UNEP, IUCN		Continually updated assessment statements on species and species groups
(viii) Expansion of monitoring methodologies for soil degradation (including desertification processes) to a range of areas at scales appropriate for management decisions	1982-1983	UNEP, FAO, UNESCO	Assume successful testing of methodology and expert review in 1981	Successful application of methodology at range of scales under a number of conditions
(ix) Pilot project for monitoring pollutants and nutrients in biosphere reserves (temperate mixed forests)	1982-1983	UNESCO	Ongoing: initiation planned for 1981	Initial methodology; refinement of monitoring indicators

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(x) Meeting of government designated experts to review and assess the programme and results of resource monitoring and plan future activities	1982	UNEP, FAO, UNESCO		Statement of effectiveness of programme
<u>(b) Climate related monitoring</u>				
<u>Objective</u>				
To acquire, analyse and disseminate the information necessary to understand climatic conditions and variability and its impact on ecological systems and on human activities, and, conversely, to understand the effects of human activities (such as pollution, changes in albedo) on climate.				
<u>Strategy</u>				
Co-ordinated collection of data of global relevance by national institutions, their publications by designated national centres and their analysis by consultants recruited, and expert groups convened, by UNEP and/or the co-operating agencies.				
<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Collection and development of methods for the acquisition of data required to assess trends in the variables that may affect climate or reflect its state and changes: progress will be reviewed by a group of government experts. Eight sub-elements will contribute to the data base required by the World Climate Programme:	Continuing activity	UNEP, UNESCO, WMO, ICSU, ETH (Zurich, Switzerland), IOC, IGOS, CCCC		Reliability, comparability and coverage of the data. Their relevance to climatic problems as determined by government expert group

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Continued monitoring of background atmospheric pollution and of the composition of precipitation as initiated under the UNEP/WMO BAPMoN project				
(ii) Continuation of the inventory and monitoring of glacier masses, and initiation of co-ordinated monitoring of the snow cover and sea ice, etc.				
(iii) Monitoring of the heat budget of the earth's atmosphere system, including studies of solar radiation, land surface albedo, aerosols cloudiness and ocean dynamics				
(iv) Monitoring of important ocean variables, such as temperature, salinity and currents, throughout the oceanic profile				
(v) Monitoring of volcanic activity through extensions of BAPMoN to include aerosol and dust observation				
(vi) Further development of the use of satellites for climate-related monitoring				
(vii) Collection and analysis of historical (archived) data and proxy data, such as tree ring observations, ice cores, sea bed cores, etc.				

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(viii) Strengthening of the WHO world-wide system for climatological data observation, collection, archiving and retrieval from national stations	1982-1983	UNEP, WHO	Will require suitable background areas, e.g. biosphere reserves, and is expected to continue beyond 1983	
Pilot study on integrated background monitoring of environmental pollution				

(c) Health related monitoring

Objective

To develop, demonstrate and apply methods for the generation of comparable information on the levels in various media of the most common pollutants relevant to human health and the quality of the environment and on their transfer between media.

To determine human exposure to the pollutants in order eventually to correlate exposure with effects and thereby to assess the cost of pollution in terms of damage to man and other targets.

Strategy

Co-ordinated collection of data in different media by national institutions, their processing by collaborating national centres and publication by WHO. The data to be analysed by the secretariats with the assistance of consultants, and their significance assessed by a Government Expert Group.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
<p>(i) A government expert group on health-related monitoring will, on the basis of background reviews prepared by the secretariats with the assistance of consultants, evaluate the design of the activities and their results, assess their significance and make recommendations on the further development of the component. The results of the meeting will help provide achievement indicators for a number of the elements described below</p>	1982-1983	UNEP, WHO		Effectiveness of recommendations in improving health-related monitoring activities
<p>(ii) Monitoring of air pollution in urban areas. Continuation of long-standing activity will expand the network, increase the quality of the data and broaden the spectrum of pollutants monitored</p>	1982-1983	WHO, WMO	As a result of the recommendations of the government expert group on health-related monitoring health-related activities will probably be amalgamated during the biennium into comprehensive multi-media projects aimed at the assessment of human exposure	Relevance of the data for the countries concerned and their adequacy as determined by the government expert group
<p>(iii) Biological monitoring. Determination of body burdens and therefore of exposure to selected metals and organochlorine compounds by analysing samples of body tissues and fluids. A limited number of countries, both developed and developing, are involved, and major emphasis is placed on comparability of data through quality assurance</p>	1982-1983	UNEP, WHO	Ongoing	Adequacy of the data for comparing exposure of groups both within and without countries, as determined by the government expert group

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iv) Multimedia integrated monitoring will determine the rates of transfer of selected pollutants through the environment from sources to targets	1982-1983	UNEP, others to be determined	Ongoing: assume 1981 start	Statements on transfer rates for selected pollutants at low levels of pollution
(v) Food and animal feed contamination monitoring. Continuation of long-standing activity will make coverage more representative, and data more comparable, through tighter quality assurance procedures, and easily retrievable through the development of a central data bank	1982-1983	UNEP, FAO, WHO	Ongoing	Relevance of the data for the countries concerned and their adequacy as determined by the government expert group
(vi) Water quality monitoring. Continuation of long-standing activity will expand the network and ensure the quality of the data that will be stored centrally in computerized data bank	1982-1983	UNEP, WHO, WMO, UNESCO	Ongoing	Relevance of the data for the countries concerned and their adequacy as determined by the government expert group
(vii) Assessment of human exposure to air pollutants. Unlike the first element of this component, which will determine levels of pollutants at a few stations in the open, this activity will assess the actual exposure of individuals to inhaled pollutants both indoors and outdoors, according to their habits and life styles, by means of a series of demonstration projects in widely differing urban situations	1982-1983	UNEP, WHO, WMO	Ongoing	Adequacy of the data for comparing exposure of groups both within and between countries, as determined by the government expert group

(d) Long-range transport of pollutants

Objective

To determine the dry and wet deposition rates of pollutants (e.g. sulphur oxides and their transformation products) and relate them to the movement of air masses from the pollutant sources to distant targets, particularly across borders.

Strategy

Collection of chemical data on precipitation chemistry at a number of national centres, their transmission analysis and dissemination being ensured by a co-ordinating centre. Trajectories of air masses are determined from standard meteorological measurements that are synthesized and evaluated by an Eastern and a Western European meteorological centre. A Steering Body ensures the over-all co-ordination of the programme.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Continued collection, analysis and synthesis of emission and meteorological data from a network of stations in participating countries	1982-1983	ECE, UNEP; WMO	Ongoing	Production of an assessment statement on effects of pollutants transported over long distances in Europe
UNEP				

4. Budgetary implications

	1982 \$US	1983 \$US
UNEP	2,900,000	3,100,000

C. INFOTERRA
(budget sub-line E302)

1. Background

16. In response to the need for a mechanism to facilitate rapid access to available environmental information expressed in recommendation 101 of the Stockholm Conference, a network was established for the exchange of environmental information -- the International Referral System for sources of environmental information (INFOTERRA, formerly IRS).

17. The INFOTERRA Programme Activity Centre was established pursuant to Council decision 29 (III) of 2 May 1975, paragraph 9 (i). Other significant decisions include: 47 (IV) of 14 April 1976; 82 (V); 6/3 A of 24 May 1978; 7/4 C of 3 May 1979 and 8/6. Two INFOTERRA focal point management meetings held in Nairobi, January 1975 and Moscow, October 1979 further developed operational criteria for the system.

18. The methodological principles underlying the UNISIST programme of UNESCO have been followed in the development of INFOTERRA. In particular, the INFOTERRA network is based on linkages of national information systems, and maintains close operational links with appropriate United Nations and other information systems, such as the Marine Environmental Data and Information System of the Intergovernmental Oceanographic Commission (MEDIS); the Aquatic Sciences and Fisheries Information System (ASFIS) and the International Information System for the Agricultural Sciences and Technology (AGRIS) of FAO, the UNIDO Information Referral System on technical co-operation among developing countries (INRES); and the Environmental Law Information System (ELIS) of LUCN.

19. The 1982 goal for INFOTERRA, which calls for "an operational INFOTERRA with all interested countries having registered sources and making use of the service", is being implemented on schedule.

2. Objectives

20. The over-all objective of INFOTERRA is to ensure that the information needed for rational decision-making and for achieving environmentally-sound development is available to those who need it.

3. Activities to advance the objectives

(a) Objective 1

To operate an international referral network for environmental information.

Strategy

Provision of assistance for active participation in INFOTERRA by Governments, agencies and other bodies, particularly technical assistance to improve the capability of developing countries to produce and use environmental information.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Eight training courses for INFOTERRA national focal points (NFPs) in all aspects of INFOTERRA operations as well as in general information-handling techniques to develop self-reliance in obtaining environmental information	1982-1983	UNEP, in co-operation with UNESCO, Governments	Two training courses each for English-speaking and French-speaking NFPs in Africa; one training course for English-speaking NFPs in the Caribbean and North America; two training courses for Spanish-speaking NFPs in Latin America; one training course for Russian-speaking NFPs in Eastern Europe	Increase in number of designated NFPs, to 120; NFPs registering sources, 85; sources registered globally, 10,000 Provision of satisfactory referral services to majority of users, as measured by routine user-satisfaction surveys Increase in number of trained NFP staff, to 250
(ii) Consultancy services to NFPs	1982-1983	UNEP, Governments	As requested by Governments	
(iii) Regular publication of <u>INFOTERRA Bulletin and Technical Supplements</u>	1982-1983	UNEP	In English, French, Russian, Spanish; continuing after 1983	Six issues of <u>INFOTERRA Bulletin published annually</u>

Achievement Indicator

Four model focal points maintained

Remarks

Main actors

Date of action

Elements of the strategy

(iv) Financial and technical support to a selected NFP in each region to serve as an INFOTERRA model focal point

(v) Production of INFOTERRA self-teaching materials

(vi) Five Regional INFOTERRA Management Meetings

(b) Objective 2

To ensure ready access to relevant environmental information by creating appropriate channels for dissemination of information

Strategy

Publication of a regularly updated International Directory of information sources, searchable by computer or manually, giving relevant information on their capabilities in the field of the environment; publication of specialized directories on priority environmental topics; assistance to NFPs for publication of national directories of sources

Elements of the strategy

(i) Publication of INFOTERRA International Directory and Supplements

(ii) Publication of specialized INFOTERRA directories (e.g. on environmental aspects of new and renewable energy sources, water, etc.)

Remarks

Main actors

Date of action

Achievement indicator

Publication of INFOTERRA Directory biennially with 6-monthly supplements; four specialized directories

English, French, Russian, Spanish, continuing beyond 1983

UNEP

1982-1983

(i) Publication of INFOTERRA International Directory and Supplements

Procedures Manual for documents handling by NFPs

In response to particular priority needs

UNEP

1982-1983

(ii) Publication of specialized INFOTERRA directories (e.g. on environmental aspects of new and renewable energy sources, water, etc.)

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iii) Publication of national INFOTERRA directories	1982-1983	Governments	Primarily level 2 activity	
(iv) Performing computer searches for NFPs in developing countries and for UNEP and other United Nations bodies and agencies	1982-1983	UNEP	Continuing activity	
(v) "INFOTERRA 10 years after Stockholm"	June 1982	UNEP, Governments		Distribution to NFPs of a display kit and exhibits on "INFOTERRA 10 years after Stockholm"
(vi) Collaborative projects to develop methodologies and training programmes for furthering information exchange at focal point level through documents delivery and direct information supply	1982-1983	UNEP, Governments agencies	Subject to approval of INFOTERRA evaluation recommendations	Advanced training on information delivery given to 25 NFP staff
(c) <u>Objective 3</u>				
To achieve co-ordination of environmental information activities through improved linkages with other appropriate information systems				
<u>Strategy</u>				
Promotion of co-ordinated efforts by United Nations agencies and other organizations in the field of environmental information; promotion of compatibility between existing and planned information systems, within the principles of UNISIST; maximum use of existing and planned information sources and systems				
<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Active participation in design and development of other information systems	1982	UNEP, agencies	Primarily level 2 activity	Specific co-operative agreements with other information systems Improved compatibility of software

(d) Objective 4

To improve communication links among individual components in the information flow by co-operating with Governments and with United Nations and other appropriate organizations in introducing computer and other modern technologies required for efficient exchange of information, and to assist NFPs in the acquisition of required training

Strategy

Provision for technical assistance to NFPs in developing countries in computerizing their INFOTERRA operations; encouragement of programmes for bilateral assistance and technical co-operation among INFOTERRA partners

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Conversion of INFOTERRA software as required for use on different computers available to INFOTERRA NFPs	1982-1983	UNEP, Governments		Increase in number of NFPs provided with INFOTERRA computer software, to 25
(ii) Consultancy service to assist INFOTERRA NFPs in mounting INFOTERRA programmes onto their computers	1982-1983	UNEP, Governments	As requested by Governments	
(iii) Establishment of rapid communication links throughout network	1982-1983	UNEP, Governments		Use of telecommunications for referral services by majority of active NFPs
(iv) Further refinement of INFOTERRA techniques, including development of on-line options on experimental basis	1982-1983	UNEP, Governments agencies		

(e) Objective 5

To promote the use of available environmental information resources through wide-ranging publicity and training in the use of existing information systems, in particular INFOTERRA

Strategy

Production of promotional materials as models for use by NFPs; assistance to NFPs in organizing and conducting national user-training seminars; briefing and presentations on INFOTERRA at appropriate gatherings of potential users.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Eight national INFOTERRA seminars	1982-1983	UNEP, Governments		Four user-training seminars each year
(ii) Production of promotional materials	1982-1983	UNEP	In English, French, Russian, Spanish	Three promotional packages each year
(iii) Presentation on INFOTERRA at technical meetings, training courses, international conferences, etc.	1982-1983	UNEP, Governments agencies		Four INFOTERRA presentations each year

4. Budgetary implications

	1982 \$US	1983 \$US
UNEP	1,000,000	1,400,000
UNESCO Regular Programme	900,000	900,000
UNESCO Extrabudgetary	1,500,000	1,500,000

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

1. Background

21. The International Register of Potentially Toxic Chemicals was established in response to Recommendation 74 (e) of the Stockholm Action Plan and Governing Council decision 29 (III), paragraph 8. Other relevant decisions of the Council include 8 A (II), section I, paragraph I (k); 50 (IV) of 13 April 1976, paragraph 8; 82 (V) and 6/3 B of 24 May 1978, which, following an in-depth review, approved revised objectives and strategies.

22. The relevant UNEP goal for 1982, IRPTC in a position to issue warnings and technical publications, is expected to be achieved by 1982. Close links are maintained with several international organizations, particularly ILO and WHO in the International Programme on Chemical Safety (IPCS), and, as part of Earthwatch, with UNEP's activities in the fields of health, industry, regional seas and law. In addition, UNESCO is developing post-graduate courses on environmental chemical techniques and ecotoxicology.

2. Objectives

23. The over-all objective of IRPTC is to help Governments reduce the hazards associated with chemicals in the environment by supplying relevant information to those responsible for human health and environmental protection and providing base data for evaluating (and eventually, if possible, predicting) the hazards associated with particular chemicals.

3. Activities to advance the objectives

(a) Objective 1

To facilitate access to existing data on the effects of chemicals on man and his environment, and thereby contribute to a more efficient use of national and international resources available for the evaluation of effects of chemicals and their control.

On the basis of information in the Register, 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.

Strategy

IRPTC will assist national and international activities and programmes aimed at evaluation of hazards from chemicals to man and his environment, and their control. The over-all strategy will include data collection, processing and dissemination on a co-operative basis with worldwide network partners, operation of a query-response service, assistance in the establishment of national registers, and the holding of workshops and seminars on specific topics relevant to these operations.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Preparation, storage and dissemination of data profiles for chemicals	1982-1983	UNEP, United Nations agencies, NGOs	Ongoing	Publication of data profiles as and when materials become available; of bulletins twice a year; effective establishment of national information systems; increased output of international evaluation of chemicals.
(ii) Operation and strengthening of query-response service	1982-1983	UNEP, United Nations agencies, NGOs	Ongoing	
(iii) Publication and wide dissemination of <u>IRPTC Bulletin</u>	1982-1983	UNEP, United Nations agencies, NGOs	Ongoing	
(iv) Identification of and co-operation with existing data systems as contributing network partners	1982-1983	UNEP, United Nations agencies, NGOs	Ongoing	

(b) Objective 2

To identify or help identify potential hazards from chemicals and to improve the awareness of such hazards.

Strategy

Assistance in the establishment of systems and the publication of reviews which will help to improve the awareness of potentially noxious effects from chemicals, are important elements of the strategy. Workshops and training courses to familiarize users with such systems and publications and the information and data they contain, are essential supporting measures.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Holding of a symposium and preparation of draft recommendations on methodology to measure and evaluate effects of chemicals on man and the environment, and to set standards	1982	UNEP, United Nations agencies, USSR Government	Commenced 1981. Draft to be circulated to Agencies and Governments before finalization	Publication of recommendations
(ii) Holding of training courses on selected topics of toxicology and environmental chemistry	1982-1983	UNEP, UNESCO, other United Nations agencies, USSR Government	On-going in the case of UNESCO programmes	Number of trainees
(iii) Regular workshops for national correspondents	1982-1983	UNEP	Ongoing	Increased use of Register and establishment of national systems
(iv) Participation in ILO Occupational Safety and Health Hazard Alert System	1982-1983	ILO, WHO	Ongoing	Improved protection of worker's health; system fully operational in 1982
(v) Review of information on selected chemicals collected under objective 1	1982-1983	UNEP	Ongoing	Issuance of technical publications and warnings on chemicals
(vi) Co-operation with and support to international programmes, particularly IPCS	1982-1983	UNEP, ILO, WHO	Relevant to health as well	

4. Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	1,500,000	1,800,000
UNESCO Regular Programme	30,000	30,000
UNESCO Extrabudgetary	50,000	50,000

E. OUTER LIMITS
(budget sub-line 1303)

1. Introduction

24. The term "outer limits" is used to denote the limits of tolerance of the biosphere, and of the different sub-systems of which it is composed, to the demands placed upon it by human activities. When these limits are transgressed, human welfare - even life itself - is threatened. No social or economic endeavour, including the satisfaction of basic human needs, can safely ignore the restraints imposed by outer limits.

25. The Governing Council has identified the following subjects for particular attention:

- (a) Assessment of basic human needs in relation to outer limits;
- (b) Assessment of the following outer limits:
 - (i) Climatic changes;
 - (ii) Weather modification;
 - (iii) Risks to the ozone layer;
 - (iv) Social outer limits.

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

(a) Background

26. Mass poverty and non-satisfaction of basic human needs are expected to affect hundreds of millions of people by the end of the 1980s, most of them in the rural areas of developing countries. Lasting alleviation of rural poverty is not possible without simultaneous policy and programme attention to natural resources conservation and improvement of the physical environment in rural areas. Employment generation and income improvement programmes for poverty groups should take into account the need to preserve ecological integrity through sound environmental management of natural resources. Similarly, programmes and policies relating to conservation of nature and ecosystems need to be carefully designed so as to promote satisfaction of basic needs of the poor.

27. There is no separate Governing Council decision on this programme. However, the Programme of Action adopted by the World Conference on Employment, Social Progress, Income Distribution and International Division of Labour, 1976, the World Conference on Agrarian Reform and Rural Development, 1980, as well as the World Conservation Strategy, especially as it relates to rural development, and the United Nations International Drinking Water Supply and Sanitation Decade, 1981-1990, are especially relevant to UNEP's work in this field, which should also assist in the attainment of goal 12 for 1982 (see Integrated approach to environment and development below).

(b) Objective

28. The basic objective is to strengthen national and international action for promotion of sustainable satisfaction of basic human needs through:

(a) The generation, mobilization and dissemination of scientific evidence on the interrelationships between mass poverty and environmental quality;

(b) Guidance on design of programmes and strategies for alleviating poverty in ways which take environmental considerations into account.

3. Assessment of outer limits

(a) Background

(i) Climate impact study programme and climate changes

29. By decision 7/4 D, the Governing Council requested UNEP to collaborate with WMO and other organizations concerned with the World Climate Programme in the implementation of the sub-programme for the study of the impacts of climate on human activities, and, if so requested by WMO, to assume, within the availability of funds, responsibility for the implementation of this sub-programme, under the over-all co-ordination of WMO. A draft Plan of Action for the Climate Impact Study Programme was approved by the Governing Council at its eighth session (UNEP/WG.38/4). A Scientific Advisory Committee of WCIP has been established to guide the implementation of the Plan of Action. In decision 7/4 E, the Council highlighted the problem of carbon dioxide as an emerging global environmental problem.

(ii) Weather modification

30. Activities in this field are related to the assessment of the environmental impact of weather modification experiments, in particular, support for the WMO Precipitation Enhancement Project.

31. Goal 20 for 1982 calls for agreement on the principles which should guide States in their relations with each other in respect of shared natural resources, the problems of liability and compensation for pollution and environmental damage, weather modification and risks to the ozone layer (see also Environmental law below). By decision 8/7 A of 29 April 1980, the Governing Council recommended eight provisions for all States to take account of with respect to weather modification activities, and requested WMO to make available to UNEP information received from Governments on these provisions.

(iii) Risks to the ozone layer

32. By decision 65 (IV), the Council called for the convening of a meeting of appropriate international governmental and non-governmental organizations to review all aspects of the ozone layer. At the meeting (Washington D.C., March 1977), a World Plan of Action on the Ozone Layer was formulated, and the Co-ordinating Committee on the Ozone Layer, established in response to Governing Council decision 84 (V) of 25 May 1977, has met regularly since. Goal 20 for 1982, noted above, is also relevant to this activity.

(iv) Social outer limits

33. Measures for natural resource conservation as well as major environmental transformations sometimes meet with social constraints, since policy-makers' perception of an environmental problem may differ from that of the people affected by such measures. If environmental policies and programmes are formulated in ways cognizant of, and sensitive to, such social constraints, they stand a greater chance of success.

(b) Objective

34. The over-all objective of the assessment of outer limits is to provide a sound basis for international action to avoid unacceptable consequences from man's activities. The detailed objectives for the various components of the programme are presented in section 4 below.

4. Activities to advance the objectives

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

Objective

To assess the interrelations between rural poverty and non-satisfaction of basic human needs and environmental quality, assess environmental implications of major national programmes of alleviation of rural poverty, and to provide guidance on the design of programmes and policies for alleviation of rural poverty in harmony with prudent environmental management.

Strategy

Methodological and case study analyses on the interrelations between the persistence and alleviation of mass rural poverty and significant changes in environmental quality and their management; assistance to national, international and interagency activities aimed at evaluation of environmental implications of major programmes addressed to alleviation of rural poverty and formulation of national rural development strategies; provision of guidance for the design of poverty alleviation programmes.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Empirical research studies on poverty-environment interactions in selected ecological situations	1982-1983	UNEP in co-operation with developing country research institutions		Dissemination of monographs
(ii) Case study analyses of international factors in environmentally-sustainable alleviation of rural poverty	1982-1983	UNEP in co-operation with developing country research institutions and in consultation with FAO and UNCTAD	Continued participation in ACC Task Force on Rural Development and its co-ordinated activities	Dissemination of monographs

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iii) Participation of environmental expertise in interagency work in design of strategies for alleviation of rural poverty	1982-1983	UNEP	Continued participation in ACC Task Force on Rural Development and its co-ordinated activities	Incorporation of environmental considerations into programmes
(iv) Case study analyses of national programmes involving public works approaches to provision of employment and infrastructural improvement for poverty groups	1982-1983	UNEP in consultation with ILO		
(v) Preparation of a monograph based on the results of (i), (ii) and (iv) above	1983	UNEP in consultation with ILO, FAO, UNFPA		Publication and distribution of monograph
(vi) Consultation with international organizations regarding their work on strategies of rural poverty alleviations	1982-1983	IFAD, FAO, WFC, ILO, UNEP	Through bilateral consultations and participation in ACC Task Force on Rural Development (Level Two)	Incorporation of environmental considerations in relevant documents and publications

(b) Climatic changes

Objective

The ultimate objective of the Climate Impact Study Programme is to introduce climatic considerations into the formulation of rational policy alternatives. Sub-objectives are: (a) improvement of knowledge of the impact of climate variability and change in terms of the specific primary responses of natural and human systems; (b) improvement of knowledge and awareness of the interactive relations between climatic variability and change and human socio-economic activities; (c) improvement of assessment methodology so as to deepen the understanding and improve the simulation of the interactions among climatic, environmental and socio-economic factors; (d) determination of the characteristics of societies which make them either especially vulnerable or resilient to climatic variability and change; (e) application of new knowledge and techniques to practical problems or common needs.

Strategy

Improvement of understanding of physical processes causing climatic changes, assessment of the probabilities of such changes, and provision of information needed to assess the practical significance of man's impact on climate. Incorporation of this knowledge into national, regional and global planning.

<u>Elements of the strategy */</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Reduction of vulnerability of food systems to climate: Exploration of ways of increasing resiliency of food systems through insertion of climate considerations into ongoing studies of food systems	1982-1983	UNRISD, WHO, FAO, UNESCO, UNEP	Climate dimension to be incorporated initially in ongoing UNRISD programme operational in India, Mexico	Recommendations to Governments accepted and implemented
Identification of impacts of climatic change and variability on agriculture and the economy of developing countries	1982-1983	National institutions	Contribution to ongoing project in China	

*/ Strategy elements (i) - (v) have equal priority. Sub-elements are listed in order of priority.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(ii) Anticipation of impacts of man-induced climatic change:				
Assessment of impacts due to CO ₂ -induced climate change	Continuing	UNEP, WHO, SCOPE	First in a series of UNEP/WMO assessments on CO ₂ was made in 1980	
Co-ordinating Committee on impacts of CO ₂ -induced climatic changes	Continuing	UNEP		Information exchange and collaboration
Reduction of vulnerability of natural systems to climate change through investigation of the impact of climate change on ecosystems	1982-1983	MAB, IUCN	Close relation to genetic and wildlife preservation	Reports
Follow-up to 1980 CO ₂ assessment. Level Two activities in impact areas of agriculture, fisheries, water supply, sea level, energy, health and natural ecosystems as per recommendations of the assessment. Level Three catalytic projects as needed	Continuing	UNESCO, IEA/OECD, WHO, ICSU	Also useful in identification of climate-sensitive sectors	
Scientific Conference on CO ₂ and climate	Second half 1982	WMO, UNEP, ICSU, FAO		Action Plan for assessment of CO ₂ -induced climate change

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iii) Improvement in science of impact studies				
Study conference on methodology of impact studies. Continuing consultation to national efforts	1982	UNEP		Published guidelines for assessment
Symposium to document the science of climate impact studies	1982-1983	SCOPE		Proceedings
Technical conferences on climate (Africa, Latin America, etc.)	1982-1983	WMO	Ongoing: first conference in 1980 for Asia and Western Pacific	Identification and initiation of new climate impact activities in developing countries
Meeting on the results of first decade of the LANDSAT missions	1982	SCOPE, COSPAR		Development of a global impact assessment methodology
(iv) Identification of climate-sensitive sectors of human activity:				
Consultant activities to establish priorities for further studies	1982	UNEP		Report

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Assessments at national level of response of economic/social/political systems to climate changes; projects in developing countries including prospective studies, risk analyses, post analyses and scenario development and analysis	1982-1983	National Institutions	SCOPE experts will advise project leaders	Recommendations of reports incorporated into national planning. Visible, independent national climate impact assessment programmes
Studies of impact on selected sensitive sectors	1983			Report
(v) Support for WCIP secretariat activities: Identification of existing national/international programmes. Promotion and stimulation of climate impact studies by national and international organizations	Ongoing	UNEP		Development of national programmes on climate impact studies

(c) Weather modification

Objective

Provide sound scientific basis for development of legal provisions to prevent damage to the environment resulting from weather modification, and revision of general principles and guidelines on such modification.

Strategy

To assess the scientific credibility of precipitation enhancement and the environmental impact of the operation and enhancement within and outside the target area.

Elements of the strategy

(i) Continued support for the WMO/UNEP Precipitation Enhancement Project (PEP), phase II: enhancement experiment

Date of action

1982-1983

Main actors

WMO

Remarks

Achievement indicator

Definitive statement on feasibility of modification of convective systems

(d) Risks to the ozone layer

Objective

To provide a sound scientific basis for international action to reduce to an acceptable level the risk to the ozone layer caused by man's activities, and to mitigate the effects of increased UV-B on man and the biosphere resulting from stratospheric ozone depletion.

Strategy

Clarify the basic dynamical, photochemical and radiative aspects of the ozone layer and evaluate the impact of man's activities on the ozone balance. Promote, support and co-ordinate investigations of the impact of ozone layer modification and resultant increased ultraviolet radiation (UV-B) on man, the biosphere and climate.

Elements of the strategy

Date of action

Remarks

Main actors

Achievement indicator

(i) Regular meetings of the Co-ordinating Committee on the Ozone Layer to update the global ozone layer assessments, and to integrate and co-ordinate research efforts internationally

Continuing

UNEP

Assessment includes that of climate change and so relates to World Climate Programme

Accepted, updated assessments of risks to the ozone layer and effects; Recommendations for further research and possible regulatory action leading to a convention on the protection of the ozone layer

Assessment of ozone layer depletion and information on ongoing and planned research effort disseminated through regular publication of the Ozone Layer Bulletin

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Determine biological effects of UV-B on terrestrial and aquatic ecosystems and agriculture	Start 1982	ICSU, UNEP	Based on CCOL priority recommendations	Confidence limits of predicted effects
(ii) Provide continuing measurements of integrated ozone layer over the globe	Continuing	WMO	Based on CCOL priority recommendations	Accurate measurements of total ozone depletion
(iii) Epidemiological project to correlate UV-B measurements with human health effects	Continuing	WMO WHO	Based on CCOL recommendations	Statistical limits of correlation

(e) Social outer limits

Objective

To promote consideration of social aspects during the formulation and implementation of policies and programmes aimed at environmental conservation or transformation.

Strategy

Support research and case study analyses and disseminate their findings to Governments and concerned national and international organizations engaged in formulating and implementing environmental policies and programmes.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Comparative study on social considerations in the formulation and implementation of programmes of land development, transmigration and resettlement in developing countries	1982-1983	UNEP in consultation with FAO		Publication of monographs
(ii) Comparative study on social constraints in the implementation of energy conservation and alternative energy programmes in developed countries	1982	UNEP	Activities begin in 1981 and continue through 1982	Publication of monographs
<u>5. Budgetary implications</u>				
			1982 \$US	1983 \$US
UNEP			900,000	1,100,000

F. RESEARCH AND ASSESSMENT
(budget sub-line 1305)

1. Background

35. Delegations to the seventh session of the Governing Council expressed particular concern over the apparent lack of the assessment component within the environment programme. On the basis of the recommendations of a meeting of government designated experts on environmental assessment (Geneva, 26 November 1979) convened, in response to Council decision 7/4 of 7 May 1979, to meet this concern, the Executive Director identified (UNEP/GC.9/5/Add.1 para. 1) a preliminary list of environmental problems on which assessment could focus over the next five years. Of those problems, some are dealt with under Outer limits. To make the assessment (and research) component of the programme more clearly identifiable, others are grouped under this new budget sub-line, together with other relevant activities which were already on-going under Earthwatch and with related research into areas requiring either further knowledge or development of better methodologies before comprehensive assessments can be made. Evaluation (synthesis and analysis of data), which is also a part of Earthwatch (see para. 8 above) takes place in both research and assessment.

36. In this initial stage, activities under the new sub-line focus primarily on productive agriculture. In the face of rising population, the productive capacity of the biosphere's resource base must be stretched even further. For the most part, increased food production has been gained mainly by the expansion of cultivation to seemingly inexhaustible virgin lands. However, it is now clear that the additional production needed in the developing countries must be achieved by intensifying agriculture on land already under cultivation. Some of the constraints to increased productivity are environmental - strained soil, water and energy resources; persistent low productivity of many of the plant and animal stocks; adverse agroclimatological conditions; primitive and ecologically inefficient farming systems, and inappropriate technological packages. Sustained assessment of and research on such problems can now be implemented within a co-ordinated international system.

2. Objectives

37. To encourage, promote and provide timely environmental assessments for the development of management strategies on important topics which are either not covered by other components of Earthwatch, or, if covered, require additional information or impetus through research, to permit the ultimate satisfaction of human needs in ways consistent with biospheric stability.

3. Activities to advance the objectives

Strategy

Development of suitable environmental assessment methodologies; filling of gaps in primary data or knowledge through initiation of and participation in co-ordinated research; collation and evaluation of existing information.

Elements of the strategy Date of action Main actors Remarks Achievement indicator

(i) Bioproductive systems

Photosynthesis:

- Co-ordinated regional surveys of photosynthetic types, particularly of species with high hydrocarbon content
 - Training courses in techniques for bioproductivity and photosynthesis research
 - Effects of improved photosynthetic efficiency on the carbon cycle and atmospheric CO₂
 - Panel session on biomass for energy to appraise the outcome of the Conference on Renewable Energy Resources and give new directions
- | | | | | |
|--|------------|---|--|--|
| | Continuing | UNEP, UNESCO in co-operation with selected centres in developing regions | Panel to be expanded and strengthened. Two more centres to be established, 1982-1983 | Monographs, published data in journals, review |
| | Continuing | UNEP, UNESCO, UNDP in co-operation with training institutes in developing countries | At least one training course per year per region | Trained personnel |
| | 1983 | UNEP, WMO, UNESCO, IUCN and SCOPE | High-level research which should benefit from the World Climate Programme | Reviews |
| | 1983 | UNEP, UNESCO, SCOPE | Special session of the panel with experts | Proceedings |

Achievement indicator

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
- <u>Biological nitrogen fixation and plant nutrition studies</u>	1982	UNEP, UNDP, FAO, international agricultural research centres	Expansion of work in progress. See also the genetic resources programme	
- <u>Resistance to environmental stresses, including adjustments to weather and climate fluctuations, adverse soil conditions and water stresses</u>	1982	UNEP, UNDP, FAO, World Bank, IFAD	A major area of CGIAR concerns	
- <u>Pest management systems to reduce pre-harvest losses and evolve specific control mechanisms</u>		FAO, UNDP, IFAD, international agricultural research centres and ICIPE	See also pest management programme	
- <u>Studies on prevention of post harvest losses</u>		FAO, IDRC	Level Two only	
- <u>Bioproductive capacities. Support the expansion of the agro-ecological zones project to include production systems other than rain-fed agriculture (e.g. pastoralism, forestry, fisheries), initially through an expert group meeting to develop the modalities of such expansion</u>	1982	UNEP, FAO, UNESCO	Requires initial informal planning with other actors; see also programme on soils	Plan of action for assessment of bioproductive capacities
(ii) <u>Biogeochemical cycles</u>				
- Nitrogen biochemical cycle	1982	UNEP, SCOPE, Government of Sweden	Co-ordinated by the Royal Swedish Academy of Sciences	
- Carbon cycle, including the issue of CO ₂ and climate	1982-1983	UNEP, SCOPE, Governments of Germany, Federal Republic of, and Sweden	Co-ordinated by the Royal Swedish Academy of Sciences and Hamburg University	

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Sulphur cycle, including the problems of urban area pollution and eutrophication of water bodies	1981-1983	UNEP, SCOPE, USSP Government	Co-ordinated by the USSR Academy of Sciences	
Integrated studies	1982	UNEP, SCOPE	First analysis in 1981 including proposals for further action	
(iii) <u>Minimum area requirements (MARs)</u> Workshop of experts to determine criteria for defining MARs for the maintenance of selected species and their habitats, initially terrestrial, and to suggest areas to serve as initial case studies for research and evaluation	1982	UNEP, FAO, UNESCO, IUCN	Provision of initial criteria	
(iv) MARC continues to devise pollution evaluation methods to identify monitoring needs and ways to meet them, to develop pollution assessment procedures in related countries. It also provides on request specific advice to Earthwatch and GEMS	1982-1983	UNEP, WHO, Chelsea College, SCOPE	Ongoing	Continuation of the series of MARC publications on methods of assessment for specific environmental agents
(v) An expert workshop to review knowledge of the response of initially terrestrial organisms and ecosystems to pollution in order to identify critical areas and indicators for monitoring and assessing effects on non-human targets, and to outline a detailed plan of research and assessment	1982	UNEP, SCOPE	Requires co-ordination with and possibly involvement of other potential actors (FAO, UNESCO, WHO)	

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(vi) Appropriate research centre provides services in the field of resource assessment	1982-1983		Assumes identification of centre in 1981	
(vii) <u>Forests assessment</u> Second phase of the world assessment of forest resources will examine in detail the nature, rates and causes of changes in tropical forests, including xeric woodlands used as fuel sources; it will also expand the assessment to sub-tropical (China, Argentina) and temperate zones	1982-1983	UNEP, FAO	Ongoing, assuming initiation in 1981	Periodic (five yearly) global assessments and provision of national assessments on request; computerized data base
(viii) <u>Rangelands assessments</u> Initiation of global rangeland resources assessments, to include non-tropical biomes	1982	UNEP, FAO, UNESCO		First assessment by 1984
(ix) <u>Shifting cultivation</u> Consultation followed by expert group to determine scope of problem, data bases and gaps	1982-1983	UNEP, FAO		Soundness of the group's proposals for continuing activities
(x) <u>Loss of cropland</u> Consultancies to examine literature, air photo and satellite imagery data bases in context of forest and range assessments	1983	UNEP	Assumes access to preliminary results from rangeland assessment	Work plan for continuing activities if required

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(xi) <u>Acid rains</u> Over-all assessment of the transport of pollutants over Europe and North America and of the effects of observed levels on health, living resources, soils and materials	1983	UNEP, ECE, WMO	Involvement of other actors (FAO, UNESCO) will have to be considered with them	Production in 1983 of assessment statement useful in the context of the convention on Long-range Trans-boundary Pollution

4. Budgetary implications

UNEP	1,200,000	1982 \$US
		1983 \$US
		2,000,000

G. ENVIRONMENTAL DATA
(budget line 16)

1. Background

38. In response to the Stockholm recommendations, the Governing Council has adopted the following decisions which constitute the basic legislative authority for activities relating to environmental data: 7 (II); 27 (III); 47 (IV); 50 (IV); 83 (V) and 7/3.

39. While UNEP has collaborated closely with the United Nations Statistical Office in the field of environmental statistics, co-ordination of data handling activities within the United Nations system is undertaken mainly on the basis of reports by the specialized agencies to the meetings of the ACC Sub-Committee on Statistical Activities. At the regional level, co-ordination is achieved particularly through joint work programmes between the Statistical Office and the regional commissions. The recent thematic joint programming meeting of the Earthwatch Working Group (13-17 October 1980) expressed its support for a continuing data programme using the established channels of national and international data collection and concentrating on the improved flow of socio-economic information for environmental assessment and decision-making, and also recommended the development of environmental statistics and indicators, as well as collection of information on environmental activities.

2. Objectives

40. The over-all objectives of this programme are to promote the provision of comparable environmental data for purposes of rational environmental management at the national, regional and global levels and to collect information for the formulation, implementation and evaluation of a system-wide United Nations environment programme.

3. Activities to advance the objectives

(a) Objective 1

To promote the provision of comparable environmental data for purposes of rational management at the national, regional and global levels.

Strategy

Development of national and international environmental statistics and indicators.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Development of a framework and guidelines on concepts, classifications of environmental statistics in the areas of ecosystems, environmental health, environment and development, wildlife and protected areas, and the working environment	1982-1983	United Nations Statistical Office, UNEP, ECE, relevant agencies	To be published by the Statistical Office in the methodological studies series	Completion of the series of publications by 1985
(ii) International expert group on environment statistics	1982	Statistical Office		
(iii) Country survey and updating of directory on country practices	1982-1983	Statistical Office, regional commissions and Governments, UNEP	Abstract directory to be published in UNEP's Reference Series	Number of countries participating; establishment of directory by 1983

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(iv) Co-ordination of environmental statistics and indicators, in particular by the following meetings:				
- ACC Sub-Committee on Statistical Activities	Annually	Agencies (serviced by the Statistical Office)	Co-ordination is also to be achieved by a review of	Development of a co-ordinated work programme of the United Nations in the field of environmental data
- Statistical Commission	1983	Governments (serviced by the Statistical Office)	United Nations and governmental activities for the development of the directory	
(v) Workshops and country pilot studies on environmental statistics	1982-1985	Statistical Office, regional commissions and Governments		
(vi) Training of statisticians and technical assistance to governments	1982-1985	Statistical Office		Statisticians trained, technical assistance granted
(vii) Data collection, storage and retrieval	1982-1985	Statistical Office, regional commissions		Publication of statistical compendia
- preparation of global and regional compendia			Data base to be registered as INFOTERRA source	
- computerized environmental data base			Use of data packages for environmental assessment and the state of the environment reports is envisaged	Provision of data packages
- special purpose data packages for international users				

Strategy

Provision of information on major environmental events (e.g. major pollution accidents) and trends (e.g. changes in forest cover or in availability of arable land).

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
No sub-elements	1982 onward	UNEP, United Nations and other information systems	This will inter alia make available on a continued basis to the Information Service authoritative facts and figures for dissemination through the Service's own channels	Accuracy, reliability and value of the information provided

(b) Objective 2

To collect information on the formulation, implementation and evaluation of a system-wide United Nations environment programme.

Strategy

Compilation and dissemination of information about environmental activities of major national and international organizations.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Compilation of information about environmental activities of the United Nations system	Annually	UNEP	Data collection to be continued for the system-wide medium-term environment programme, the medium-term plan and the perspective document	Reports on the environmental activities of international organizations

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(ii) Compilation of information about environmental activities of national and international non-governmental organizations	Annually	ELC		
<u>4. Budgetary implications</u>				
UNEP			1982 \$US	1983 \$US
			800,000	700,000

Chapter II

ENVIRONMENTAL MANAGEMENT

A. INTRODUCTION

41. Of the 109 recommendations in the Stockholm Action Plan, 66 - recommendations 1-3, 9-10, 12-15, 17-23, 27, 32-33, 36-39, 42-48, 50-55, 61, 63, 68-72, 75 (b), 81-86, 88, 92-94, 96 (b), 98-100 (a) and 102-109 - relate to environmental management. Over the past eight years, the Council has in numerous decisions provided guidance for the efforts of UNEP to respond to these recommendations in the development and implementation of the environment programme.

42. This chapter follows the practice in previous programme documentation of grouping programmes, there referred to as subject areas under major subject areas, namely Human settlements and human health (with a modified title), Terrestrial ecosystems, Environment and development and Oceans. Energy and Natural disasters remained separate subjects and are presented as programmes below. As noted in the general introduction (para. 2 above), however, this presentation differs from previous documents in that "environmental management", viewed as the culmination of the assessment process, is now used as a chapter heading to cover all those activities which relate to man's efforts to preserve or improve his environment, rather than being confined to a small group of activities previously treated in a separate chapter together with environmental law, and the development of environmental law itself is now viewed as a part of management in this broader sense. The separation of environmental assessment and environmental management is, of course, to some extent arbitrary, as some activities involving both of them may be found in both this and the preceding chapter. The new presentation is nevertheless felt to constitute a clearer and more logical approach to dealing with the broad range of activities covered under the environment programme.

B. ENVIRONMENTAL ASPECTS OF HUMAN SETTLEMENTS PLANNING AND HEALTH OF THE PEOPLE AND OF THE ENVIRONMENT (budget line 01)

1. Introduction

43. This section covers the following programmes: Environmental aspects of human settlements planning; human and environmental health; working environment; and pest management systems. The programme on the working environment was the subject of further thematic joint programming at Rome in September 1980, and the environmental aspects of human settlements planning were reviewed through interagency consultations at Nairobi in December 1980.

44. These four programmes are linked with several others: for example, the environmental aspects of human settlements planning with natural disasters; environmentally-sound and appropriate technology; energy; supporting measures; human health, including the health aspects of GEMS and IRPTC, industry, working environment and water.

2. Environmental aspects of human settlements planning
(budget sub-line 0104)

(a) Background

45. Human settlements has been at the forefront of the environment programme ever since the Stockholm Conference, which adopted 14 recommendations on the subject, among them recommendation 109, and stated that "the planning, improvement and management of rural and urban settlements demand an approach at all levels, embracing all aspects of the human environment, both natural and man made". ^{1/} More recent legislative authority for the programme is in General Assembly resolution 32/162 of 19 December 1977, which, besides establishing the United Nations Centre for Human Settlements (UNCHS) and locating it at Nairobi on the grounds that there should be close links between the Centre and UNEP, recognized UNEP's responsibilities for the environmental aspects and consequences of human settlements planning. It also established the modalities of co-operation between the two organizations through joint meetings of their executive heads with the bureaux of the Commission on Human Settlements and the UNEP Governing Council. In 1980, the Commission and the Governing Council recommended the convening of annual, as opposed to biannual, joint meetings. The General Assembly, in resolution 35/77 B of 5 December 1980, approved this recommendation.

46. Since the establishment of UNCHS, three meetings of the joint bureaux have been held. As a result new co-operative ventures have been initiated, among the most important being one related to the preparation of guidelines for environmental aspects of human settlements planning. Furthermore, both organizations have fully realized the need to approach their mandates pragmatically and with flexibility. In general, therefore, UNEP will continue to exercise responsibility in the area of the environmental aspects of human settlements planning. Within the framework of UNESCO's MAB Programme, integrated studies are carried out on the functioning of human settlements as ecological systems, as a basis for improved urban and regional planning. Special emphasis is given by UNESCO to energy use in urban systems, interactions with rural hinterlands, socio-cultural aspects of marginal settlements and to self-help housing.

47. The implementation of the relevant UNEP goal for 1982, "provision of guidelines and advice on appropriate and environmentally sound technology, and establishment of a global network of institutions to test, apply and circulate them further", has met with limited success so far.

(b) Objectives of the programme

48. The over-all objectives of the programme are to evolve environmental guidelines for human settlements planning for incorporation into human settlements development, and to identify environmentally sound and appropriate technologies for improving shelter, infrastructure and services on human settlements.

^{1/} United Nations publication, Sales No. E. 73. 11. A. 14, p.6.

(c) Activities to advance the objectives

Objective 1

To refine the conceptual basis for, and prepare specific guidelines on the environmental aspects of human settlements planning.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Undertake studies to identify main issues; review by panel of experts and preparation of guidelines	1982-1983	UNCHS, ILO, UNEP	Ongoing since 1980	Publication of general report on conceptual framework and publication of specific guidelines
(ii) Undertake interdisciplinary studies of human settlements as ecosystems	Ongoing	UNEP, UNESCO (MAB), UNCHS	Ongoing since 1980	Improvement in urban and regional planning in at least 10 countries hosting case studies. Publication of report on Ecosystems Approach to Human Settlements Planning

Objective 2

To promote settlement policies and strategies for improved environmental management of human settlements in fragile ecosystems.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Preparation of methodologies for identifying and demarcating sensitive settlement areas, and establishment of trends in environmental stress; preparation of model policy to mitigate these problems; development of comprehensive environmental impact assessment methodologies	1982-1983	UNCHS, UNEP, UNESCO		Adoption of sound policies on environmental management of human settlements by governments

Objective 3

To undertake training courses and related research for sound environmental management of human settlements.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Preparation and revision of manuals for training; organization of the training courses	1983	UNCHS, UNEP, UNESCO, ILO	Ongoing since June 1980	Publication of training manuals and training of personnel from developing countries

Objective 4

To improve the environmental standards of shelter and infrastructure especially for low income communities.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Identify and demonstrate environmentally-sound and appropriate human settlements technology for improvement of environmental standards of shelter, infrastructure and services	1982-1983	UNCHS, UNEP, WHO, UNIDO, UNICEF, FAO, UNESCO, regional commissions	FAO and UNESCO activities are at Level Two. UNEP activities are to be undertaken jointly with Water Task Force and Human Health Task Force, and are in line with the action plan for the International Drinking Water Supply and Sanitation Decade	Publication of manuals; promotion of demonstration projects on selected basis in developing countries through a network of institutions

(d) Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
JNEP	1,400,000	1,700,000
UNESCO Regular Programme	230,000	230,000
UNCHS (Regular and extra-budgetary sources)	332,000	350,000

3. Human and environmental health
(budget sub-line 0107)

(a) Background

49. Right from the inception of UNEP, the Governing Council has recognized the fundamental role of health and human well-being and its dependence on environmental factors. By decision I (1) of 22 June 1973, the Council stated that a particular policy objective of the Programme was "to anticipate and prevent threats to human health and well-being posed by contamination of food, air or water". Since protecting and improving man's health is linked to the quality of the environment, much of the environment programme concerns human health. Environmental factors (physical, biological and chemical) are among the major contributors to over-all morbidity and mortality, both in the developing and industrialized countries. The achievement of the global health objective of WHO, health for all by the year 2000, thus depends on international collaboration on a scale not seen so far in the field of the environment.

50. The legislative authority for this programme is to be found in recommendations 11, 12, 13, 14, 21, 70-78, 81, 82 and 84 of the Stockholm Action Plan and in Governing Council decisions I (1), 8 A (II) section 1; 29 (III); 48 (IV); 82 (V); 6/4; 7/5 and 8/8. In addition the General Assembly has from time to time addressed itself to issues relating to health of man and the ecosystems. A recent example is the proclamation by resolution 35/18, of 10 November 1980 of the International Drinking Water Supply and Sanitation Decade, in which several United Nations agencies and bodies - UNEP, UNDP, ILO, WHO, FAO, UNICEF and the World Bank, among others - are involved.

51. UNEP co-operates closely with WHO in addressing health matters related to the environment in a comprehensive manner. In particular, Goal 5 for 1982, on the provision of advice to Governments for dealing with priority pollutants, is being implemented by WHO, with UNEP support, through the environmental health criteria programme, which has now led to the formation of the International Programme on Chemical Safety, a co-operative activity of ILO, UNEP and WHO. The development, and implementation of internationally co-ordinated programmes for the assessment of human exposure to environmental agents and for the evaluation of their effects on human health forms an important part of this programme. Future emphasis will be placed on making this information available for application of national environmental hazards control programmes and in strengthening such programmes. Activities under GEMS and IRPTC are also relevant to these.

52. WHO will co-operate in national programmes for water supply and sanitation in an increasing number of countries. In keeping with the global targets of the International Drinking Water Supply and Sanitation Decade (1981-1990), the focus is now on the under-served population, on the need for a combined approach to problems of water supply and sanitation, and on the application of such primary health care principles as community involvement, the use of auxiliary manpower, appropriate technology, and the multi-sectoral approach.

(b) Objectives

53. The over-all objective of this programme is to provide Governments with the necessary information on which to base administrative and regulatory action for the protection of man's health and well-being against the detrimental effects of exposure to environmental pollutants, and the protection of the health of the environment considered as an essential counterpart to man's health and well-being.

(c) Activities to advance the objectives

Objective 1

To improve the basic health of man and his living environment, with special attention to improving water supply and sanitation.

Strategy

To achieve international co-operation and provide information to Member States on matters of environmental quality related to water supply and sanitation.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Promotion of safety through surveillance				
- Prevention of health risks through systematic surveillance of drinking water quality	Continuing	UNEP, WHO		The extent to which internationally elaborated criteria for drinking water are implemented by national Governments
- Working Group on Application of Quality Indicators for Water Supply	Continuing	WHO	Organized by WHO Regional Office for Europe	
(ii) Co-ordination with other international organizations				
- Participation in Steering Committee of the International Drinking Water Supply and Sanitation Decade	1982	UNDP, UNEP, UNICEF, ILO, FAO, United Nations, UNESCO, World Bank		The extent to which agencies succeed in co-ordinating and harmonizing the implementation of the aims of the Water Supply Decade
- Exchange of technical information	Annually	UNDP, UNEP, UNICEF, WHO, World Bank		

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iii) Demonstration projects				
- Integrated water supply	1983	UNEP, UNICEF	Second phase to commence in 1983	The extent to which the design and objectives are incorporated in similar projects elsewhere
- Hand pump technology	Ongoing	UNDP, World Bank		
<u>Objective 2</u>				
To assess and evaluate 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.				
<u>Strategy</u>				
To keep under review priority environmental agents and accelerate the evaluation of their health effects; in the case of toxic chemical as part of the International Programme on Chemical Safety (IPCS).				
<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Preparation and publication of selected environmental health criteria and of executive summaries	Continuing	UNEP, ILO, WHO		The number of environmental agents assessed and the acceptance of the evaluation by national authorities
(ii) Preparation and publication of evaluation of selected food additives and pesticide residues in food	Continuing	UNEP, FAO, WHO	Ongoing through the Joint FAO/WHO Expert Committee on Food Additives and Joint Meetings on Pesticide Residues in Food	The number of environmental agents assessed and the acceptance of the evaluation by national authorities

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(III) Review of human exposure to ionizing radiations from all sources and assessment of the attendant risks	Ongoing	UNSCEAR, UNEP	IAEA, WHO, ICRU, and ICRH are also substantially involved	Comprehensive report in 1982
(IV) Elaboration of laboratory testing epidemiological and health risk assessment methodologies and co-ordination, as necessary, of their application				
- Reports on fungal contamination of food and human health	Continuing	IARC, UNEP, WHO, FAO		Reports and manuals issued during 1982 and 1983
- Preparation of manual on the analysis of environmental carcinogens - selected methods	Continuing	IARC, UNEP		
- Report on epidemiological studies on environmental conditions and health status in developing countries	1983	UNEP, WHO		Publication of the report
- Preparation of a monograph on epidemiological methods for the assessment of health effects of environmental agents	1983	UNEP, WHO		Publication of the monograph and its wide circulation

Objective 3

To recommend measures to protect the health of people and the environment against pollution and to strengthen the capabilities of developing countries to cope with environmental health problems.

Strategy

To provide information and methods for use by Governments in the protection of the health of man and the environment from exposure to environmental agents.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Preparation and publication of guidelines for exposure limits				Publication and dissemination of guidelines
- Revision of WHO international standards for drinking water	Ongoing	UNEP, WHO		
- Support to the Codex Alimentarius activities	Continuing	UNEP, FAO, WHO		Availability of revised standards. Publication of the reports and special texts of the Commission
(ii) Preparation of guidelines for application of criteria in setting national standards and for establishment and implementation of national pollution control programmes				
- Guidelines on development of national environmental quality standards	Ongoing	UNEP, WHO		Yearly issue of guidelines
- Guidelines on criteria and standards for radiation protection	1982-1983	WHO, IAEA		Yearly issue of guidelines
- Guidelines on establishment of protection services for non-ionizing radiation	1982-1983	WHO		Yearly issue of guidelines
- Conclusion of the preliminary studies on non-human targets	1983	FAO, UNEP		See also the Research and assessment section of chapter I. Expert report expected in 1983.
- Expert Committee on Environmental Pollution in Relation to Development	1983	WHO		Report of the Committee

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iii) Development of manpower required for control and prevention of environmental hazards at the national level				
- International training for control of environmental contaminants in food (Mysore, India)	Annually	FAO, UNEP		About 17 students trained annually
- Training courses on food contamination with special reference to mycotoxins	Annually	UNEP, FAO, USSR Government		About 10 students
- Training courses on health aspects of environmental pollution	1982-1983	WHO, Government of Bulgaria		Up to 15 students
- Training courses and workshops on environmental carcinogenesis and mutagenicity	Annually	UNEP, IAEMS, IARC		Up to 20 students
- Co-ordination with other international organizations in food and nutrition programmes	Annually	ACC Sub-Committee on Nutrition	UNEP, FAO, WHO, World Bank, UNICEF, UNESCO, United Nations and member of the Sub-Committee	Reports of the Committee and extent to which national projects are undertaken
- Development of the manpower required for the evaluation of environmental agents at national level with special emphasis on disadvantaged groups	1982-1983	UNEP, ILO, WHO		

(d) Budgetary implications

	1982 \$US	1983 \$US
UNEP	3,100,000	3,800,000

4. Improvement of working conditions and of the working environment

(a) Background

54. An enormous toll of morbidity and mortality from diseases is attributable, directly or indirectly, to unsatisfactory working conditions. Development has brought with it many physical and mental health problems for workers. These have received some attention in the formal industrial sector, but risks are thought to be even greater in the agricultural sector and in the small factories, shops and workplaces of the informal sector. There is need for national and international action to prevent the adverse effects of physical, chemical and biological factors in the workplace and in its immediate environment, to prevent the mental stresses due to factors such as pace, content and monotony of work, to adapt installations and processes to the physical and mental capacities of workers and to create better conditions of work.

55. ILO and WHO have major programmes on the working environment. The activities of ILO are implemented within the International Programme for the Improvement of Working Conditions and Environment (PIACT). During 1982-1983, the work of ILO will continue to contribute to the establishment of national policies and programmes on the working environment, the improvement, together with WHO, of occupational safety and health, and the improvement of working conditions and workers' welfare with special emphasis on vulnerable and under-served groups of workers. Active co-operation exist also between ILO and IAEA (radiological protection of workers), FAO (rural workers and workers in agro based industries), UNIDO, UNDP, the World Bank, IMCO, UNESCO, UNCTAD and ECE. UNEP's role is mostly limited to providing a forum for exchange of ideas and information and joint programming. The WHO Occupational health programme will continue during 1982-1983 to emphasize the provision of health care for the under-privileged working populations, the establishment of practical guidelines and standards for the assessment and control of specific problems encountered at the work place, the co-ordination of global occupational health programmes, and the search for appropriate technologies for occupational health.

56. Recommendations 81 and 83 of the Stockholm Action Plan are relevant to this programme, as are Governing Council decisions 87 B (V), 6/6 C and 8/6, section IV.

(b) Objective

57. The objective of this programme is to assist Member States in promoting, with the full participation of employers, workers, and their organizations, consistent policies and programmes aimed at the improvement of the working environment in order that it may contribute to the highest degree to the quality of working life by preventing accidents and diseases and by enhancing the physical, mental and social well being of workers in all occupations.

(c) Activities to advance the objectives
(since the strategies relate to all the objectives, they are stated at the outset)

Strategies

- (a) Promoting the protection of workers against occupational hazards in the work place and its immediate environment by legislative, administrative and technical control measures;
- (b) Promoting the adaptation of installations and processes and operational measures to the physical and mental capabilities of workers, in particular through the application of ergonomics;
- (c) Promoting better conditions of work including measures in the field of work organization, job content, working time and workers' participation;
- (d) Ensuring that the improvement of the working environment is recognized as an essential component of a sound development strategy.

Objective 1: Assessment

To provide countries with internationally evaluated information on the conditions of workers and their effect on workers' health, safety and welfare, and with appropriate methods for the identification and control of existing and potential health hazards to workers.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(I) Assessment of national situations and needs	1982-1983	ILO, WHO	Country missions particularly in the framework of the International Programme of Action on Working Conditions and Environment	Countries in a position to define needs and set national objectives
(II) Research on selected work hazards and work related diseases, and occupational health monitoring and epidemiology	1982-1983	ILO, WHO, UNEP	Evaluation of toxic chemicals as part of the International Programme on Chemical Safety (IPCS); research on early detection of health impairments, long term effects of dangerous substances and work related diseases	Identification of health effects, particularly of long term nature

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iii) Assessment of radiation hazards and workers' exposure	1982-1983	IAEA, UNSCEAR	ninth session of ILO/WHO Committee on Occupational Health Continuing activity	Acceptance of UNSCEAR conclusions
(iv) Studies on working conditions in developed and developing countries	1982-1983	ILO		Identification of issues for future international action and recommendations
(v) Studies on working conditions of underserved and vulnerable populations	1982-1983	ILO, WHO	Studies on working conditions in the urban informal sector, on agricultural workers and on child labour and working women	Establishment of a basis for launching action plans for these groups

Objective 2: Management

To provide countries with environmental management tools and guidelines to enable them to plan and implement programmes for the protection of workers' safety and health and the improvement of working conditions.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicators</u>
(i) Monitoring of ratification and application of conventions on the working environment	1982-1983	ILO	Continuing activity	Increases in ratification of conventions reported to ILO, and application reported
(ii) Guidelines on coordination of occupational health services at national level	1982-1983	UNIDO, ILO, FAO, WHO		Use of guidelines by Governments
(iii) Preparation of internationally recommended health based occupational exposure limits	1982-1983	ILO, WHO	A seminar on policies for establishment of links	Wide dissemination and use in national standard setting

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iv) Guidelines for the prevention of occupational accidents and diseases development of guidelines for occupational hygiene	1982-1983	ILO, WHO, UNEP	Several model codes (ILO) will be revised. Work will continue into 1984	Revised guidelines finding acceptance in countries
(v) Guidelines for the radiological protection of workers	1982-1983	ILO, WHO, IAEA	In particular through Technical Committees and Advisory Groups of IAEA. Work will continue into 1984	Revised guidelines finding acceptance in countries

Objective 3: Supporting measures

To assist countries in the planning and implementation of their own programmes through technical co-operation, training and public information efforts.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Technical co-operation for planning and implementation of national policies and programmes	1982-1983	ILO, WHO, IMCO, IAEA	Country, regional and interregional activities	Successful delivery in response to requests
(ii) Development of manpower	1982-1983	ILO, WHO, IMCO, IAEA	Seminars and training courses, in particular through Turin Centre of ILO, and preparation of support material	Numbers trained
(iii) Technical information dissemination	1982-1983	ILO, WHO	Publications, information centres and the second phase of the International Occupational Safety and Health Hazard Alert Systems. See also under IRPTC.	Successful results of second phase of IOSH hazard alert system. Monitored use of publication

(d) Budgetary implications

UNEP: See under Health of people and of the environment above.

ILO: Total regular budget: US\$10,824,879; Total other sources: US\$18,516,918. Operational activities: US\$900,000 (regular budget), US\$17,985,000 (other sources); non-operational activities: US\$9,924,879 (regular budget), US\$531,918 (other sources).

WHO: Total regular budget: US\$2,483,800; Total other sources: US\$1,257,600. Headquarters activities: US\$665,900 (regular budget), global and interregional: US\$203,000 (regular budget), US\$123,600 (other sources); regional US\$1,613,300 (regular budget), US\$1,134,000 (other sources).

5. Pest management systems
(budget sub-line 0108)

(a) Background

58. Recommendations 21 and 70-85 of the Stockholm Action Plan were directed towards strengthening and co-ordinating international programmes for environmentally sound pest and vector management and the reduction of environmental pollution by agrochemicals.

59. Pursuant to these recommendations, work on the development of pest management systems identified three areas of concentration: the control of agricultural pests, mainly in cotton but also in other priority crops; the control of mosquito vectors of malaria; and the control of the intermediate snail host of schistosomiasis. Following informal consultations between United Nations agencies and Governments and in response to Council decision 8 A (II), section II (h) and (I), action plans for each of these priority areas were subsequently adopted in 1975 by three interagency/Government meetings - the Karachi Consultation on Pest Management Systems for the Control of Cotton Pests, the Lima Meeting on Bioenvironmental Methods of Control of Malaria, and the Cairo International Conference on Schistosomiasis. The Governing Council has over the years called for strengthening these and other developments in pest management systems, in particular through decision 82 (V), by which it endorsed goal 6 for 1982 namely "implementation of specific programmes to demonstrate environmentally-sound forms of controlling malaria, schistosomiasis and cotton pests as contribution to the approved action plans". At the same session, the Governing Council, by decision 85 (V), requested the Executive Director inter alia "to continue to pay special attention to the control of chronic diseases of all kinds (especially parasitic diseases) as far as they relate to environmental factors". As a means of further strengthening activities in pest management a joint FAO/UNEP/WMO Panel of Experts on Bioenvironmental Management for Vector Control was established in 1981 to provide guidance and co-ordination in vector control. The FAO/UNEP Panel of Experts on Integrated Pest Control continues to provide co-ordination and guidance in agricultural pest control.

60. Due to the close inter-relationship between schistosomiasis and water resources, elements of the action plan for schistosomiasis based on the reduction or prevention of human contact with infested water by such means as safe water supply, reduction of snail population by habitat management, improvement of waste-disposal systems and other ecologically-sound means are mainly being carried out under the water programme (budget sub-line 1107), as part of the United Nations Drinking Water and Sanitation Decade.

61. Within the MAB programme, studies on integrated pest management and effects of fertilizer use are incorporated within problem-oriented studies of man's interactions with terrestrial and aquatic ecosystems in different bioclimatic zones.

(b) Objective

62. The over-all objective of this programme is to develop and assist Governments in implementing environmentally sound pest management systems for controlling certain pests and vectors affecting human health and agricultural production and to support national efforts to control endemic diseases arising from environmental conditions. More specific objectives are given in section (c) below:

(c) Activities to advance the objectives

Objective 1

To continue to develop and assist Governments to implement environmentally-sound pest management systems for controlling certain pests aimed at the reduction of pesticide applications in agricultural production.

Strategy

Based on the recommendations of the Karachi Consultation, to continue to develop, implement and extend inter-country programmes for integrated pest control and to assist Governments to develop national programmes for integrated pest control in agriculture and strengthen their pesticide appraisal and monitoring capabilities within the context of integrated pest management.

Elements of the strategy

(i) Development and application of integrated pest control in priority industrial and food crops and the establishment of programmes for the assessment of pesticide residues in the environment in North Africa, the Near East, Latin America, South-East Asia and the Sahelian region

<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
On-going	FAO, UNEP, Governments*/ Donors*/	Emphasis is on cotton, rice sorghum and millet. The existing FAO/UNEP programme will be strengthened by a study on the assessment of the effects of pesticides on fish in rice fields to be carried out in eight Asian countries including China	Acceptance by farmers of the integrated pest management technology Increased use of biological control agents Increases in crop and fish production with corresponding reduction in pesticide applications and subsequently residues in the environment Success achieved in initiating or strengthening national capabilities for pesticide appraisal and monitoring

*/ USAID, Australian Development Assistance Bureau, others.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(ii) Promotion of the perception and management of pests and pesticides in the context of integrated pest management	1982-1983	FAO, UNESCO-MAB, UNEP	Activities to promote the perception and management of pests and pesticides primarily at the farmer level (to be developed with FAO and the MAB Programme)	Amount of secured bilateral and multilateral assistance to develop national programmes for integrated pest control Development of economic thresholds (Sahel) The amount of influence on farmers to make their own decisions in matters related to pest control
(iii) Determination of the ecological effects of pesticides and fertilizers	On-going	UNESCO/MAB in co-operation with FAO	Activity is carried out under MAB Project No. 9	Occasional reviews by the MAB Council and FAO

Objective 2

To continue to assist Governments in developing environmentally sound management strategies for the control of diseases affecting human and livestock health and production and to participate fully in the work of the various established expert panels.

Strategy

To promote studies on the biology and ecology of priority disease vectors, including intermediate host organisms, aimed at determining and developing more appropriate techniques and methods applicable in environmentally sound control programmes.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
<p>(i) To continue to search for biological elements/agents for inclusion in control programmes for:</p> <ul style="list-style-type: none"> - the mosquito vectors of malaria - the tsetse vector of trypanosomiasis 	On-going	ICIPE, FAO, UNDP, UNEP, WHO	These studies will also include the determination of the effectiveness of larvicidous fish in controlling the mosquito vector of malaria in tropical countries. Preliminary studies will be conducted in Nepal (WHO)	Degree of positive appraisal of different expert review groups (ICIPE, UNEP/ICIPE, UNDP, etc.). Actual successful application of the biological/ecological information received in long-term control strategies
<p>(ii) To initiate further approaches for integrated control of intermediate host organisms: the intermediate snail host of schistosomiasis</p>	1982-1983	WHO, TBRI*/ UNEP	Further similar activities may be undertaken under element (iv)	Successful application of anti-snail host control using integrated ecological and habitat methods
				Results achieved from a cost-benefit assessment of the integrated approach to the snail host control envisaged in the programme
				Degree of collaboration between different institutions as a result of the application of integrated control methods

*/ Teodor Bilharz Research Institute, Cairo, Egypt.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(iii) To strengthen collaboration between national, international and bilateral agencies in the promotion and application of environmental management for vector control through the guidance and co-ordination of the joint FAO/UNEP/WHO Panel of Experts on Environmental Management for Vector Control	1982-1983	FAO, UNEP, WHO	Panel was established in 1981. First results are expected in 1982, as the first meeting will be held at the end of 1981	Level of collaboration between national, international and bilateral agencies Practical usefulness of authoritative advice on issues relating to environmental management for vector control at national and international levels
(iv) To enhance collaboration with WHO aimed at identifying, evaluating and developing biological control agents for the safe and effective control of the diseases covered by the WHO/tropical diseases research programme	1982-1983	UNDP, World Bank, WHO, UNEP	UNEP Involvement will enhance efforts towards ecologically safe control of malaria, schistosomiasis and other priority diseases	Degree of technical and financial support to environmental management for vector control at national and international levels Level of progress especially in the continued prevention and control of malaria and schistosomiasis

Objective 3

To continue to assist Governments in the development of an integrated, multidisciplinary approach for the prevention and control of zoonotic diseases.

Strategy

To promote studies aimed at stimulating the development, testing and application of integrated strategies for the prevention of zoonotic diseases and to assist Governments in strengthening research capabilities for their prevention and control.

Elements of the strategy

(i) To undertake research aimed at the improvement of immunodiagnostic tests for hydatidosis and other related parasitic zoonoses

Remarks

PAHO/WHO to implement activities in Peru and Argentina. Studies are expected to result in the development of more reliable immunodiagnostic methods initially for the detection of human and animal hydatidosis and elaborating suitable methods for their prevention and control

Main actors

PAHO, WHO, FAO, UNEP

Date of action

1982-1983

Achievement indicator

Successful applicability of the results to be published in scientific journals

(ii) To continue to provide advice and assistance in the establishment of a network of zoonosis centres and reference laboratories with a view to improving research capabilities for zoonotic diseases and exchange of scientific information between developing and developed countries

Continuing activity

FAO, UNEP, WHO

Level of co-operation achieved between the different centres and between them and Governments

Success achieved by developing countries in developing zoonotic diseases control programmes

Objective 4

To promote, through training and education, the concept of environmental sound pest management as a supporting measure for achievement of the objectives.

Strategy

To support the training of specialists in environmentally sound integrated pest and vector management and to stimulate the dissemination of information and increased public awareness through publication of educational material.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Training programmes, seminars, study tours in pest management systems for professional entomologists, field workers, chemical sales personnel, decision-makers, medical practitioners, veterinary scientists, engineers, etc.	1982-1983	FAO, UNEP, WHO, Governments, scientific institutions	Some of the activities are included under this item are on-going, others are planned	Assessment of the actual usefulness of training to developing countries through contacts with former trainees, especially those involved in decision-making
(ii) Guidelines, manuals and other educational material for the promotion of pest management systems in agriculture and human health	1982-1983	FAO, UNEP, WHO, Governments scientific institutions		Applicability of guide-lines, manuals etc. Degree achieved in strengthening research and training capabilities in developing countries

(d) Budgetary implications

	1982 \$US	1983 \$US
UNEP	2,057,000	1,992,000
UNESCO-MAB	40,000	40,000

C. TERRESTRIAL ECOSYSTEMS
(budget lines 11 and 17)

I. Introduction

63. This section presents six programmes: arid and semi-arid ecosystems including desertification; tropical woodlands and forest ecosystems; mountains, islands and other ecosystems; soils; water; genetic resources and wildlife and protected areas. These are separated from each other mainly for convenience, for together, they constitute an integrated whole.

64. Assessment is a prerequisite for effective management. Consequently, several activities presented in the various programmes are closely related to the chapter on environmental assessment. The implementation of these programmes also involves a number of agencies, notably, FAO and UNESCO; several non-governmental organizations and, most important, Governments.

2. Arid and semi-arid lands and desertification
(budget line 1700)

(a) Background

65. The United Nations Conference on Desertification (Nairobi, 29 August - 9 September 1977) produced a Plan of Action to Combat Desertification, subsequently endorsed by the General Assembly in resolution 32/172 of 19 December 1977, which contained 28 recommendations for action at the national, regional and international levels. In the same resolution the General Assembly charged UNEP with the responsibility of following up and co-ordinating the implementation of the Plan of Action. The Desertification Unit (now a Branch) was set up in 1978, and its work plans have been designed according to chapter VI of the Plan of Action - recommendations for immediate initial action. Pursuant to Governing Council decision 7/3, desertification and arid and semi-arid lands ecosystems were merged under budget line 17, in recognition of the fact that wise management of arid and semi-arid ecosystems to ensure sustained productivity involves the application of anti-desertification measures, while conversely, desertification control is essential to maximizing the productivity of arid and semi-arid lands.

66. Each year since 1977 the General Assembly has given guidance to the United Nations system, on this issue, particularly in resolutions 32/169, 32/170, 32/172, 33/88, 33/89, 34/184, 34/187, 32/72, and 35/73. Since the Desertification Conference, progress in implementation of the Plan of Action has met with several obstacles which were recognized by the ACC in its report(UNEP/GC.8/4) to the Governing Council at its eighth session.

67. A review of progress in the implementation of the Plan of Action by a group of senior consultants and the UNEP management called for a focused programme of work concentrated on major priorities, in view of limited manpower and financial resources, with greater emphasis on technical and scientific co-operation to inform and support Governments and United Nations organizations.

68. Within UNESCO's MAB programme, about 15 integrated pilot projects of applied research and training are being developed, designed to build up the scientific basis for improved land use and resource management in arid zones. Methodological studies and synthesis of information on arid lands and desertification are published. Support is being given to countries in planning and strengthening of research and training infrastructures for arid lands ecosystems development. A major interregional research, training and demonstration project on integrated management of arid and semi-arid regions was initiated by UNESCO in 1981.

69. The pertinent 1982 goal calls for concrete achievements in the implementation of the Plan of Action to Combat Desertification arising from the United Nations Conference on this subject. To date, the implementation of this goal has been gradual.

(b) Objectives

70. The over-all objective of the programme is to follow-up and co-ordinate the implementation of the Plan of Action and to assist Governments in assessing and managing their arid and semi-arid ecosystems for sustained productivity.

(c) Activities to advance the objectives

Objective 1

To help Governments to establish national programmes for monitoring and assessment of hazards and natural resources of arid and semi-arid lands in about 12 countries in Africa, the Americas and Asia.

Strategy

With particular reference to recommendations I and II of the Desertification Conference, and utilizing concepts and methodologies developed by GEMS, assist Governments which express interest in desertification monitoring in their countries in establishing national programmes. Regional co-operation is helpful for achieving the final goals.

Elements of the strategy

(i) Promotional and technical meetings in different regions, with participation of interested Governments

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Promotional and technical meetings in different regions, with participation of interested Governments	1982-1983	UNEP, regional commissions	In 1982, for Asia and West Africa (Sudano-Sahelian region), and in 1983 for Africa South of the Equator. These meetings will lay down the foundation for regional co-operation, discuss and approve methodology and establish the basis for ecological monitoring of desertification	The establishment of fully agreed, fully financed medium- or long-term monitoring projects in desertification prone countries
(ii) Project design mission to three countries each year to formulate monitoring projects	1982-1983	UNEP	Follow-up to promotional meetings held during and prior to the biennium	

Objective 2

To establish an internationally accepted methodology for assessment and mapping of desertification (Resolution I of the Desertification Conference).

Strategy

On the basis of the recommendations of the Desertification Conference and subsequent discussions, and taking into account the experience gained in the course of the preparations for the Conference, to produce a methodology which can be accepted in all quarters for subsequent description of desertification processes. The Conference called in its recommendations for immediate initial action for the preparation of a desertification map of the world at a scale of 1:5 million.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) On-going UNEP/FAO project on desertification assessment and mapping for the duration of 1980-1982	1982	FAO, UNESCO, WMO and ISSS	A review in 1981 will consider the utility of preparing a desertification map of the world as a possible follow-up to the project	International acceptance of the methodology and its utilization in assessment of desertification hazards

(ii) Application of the accepted methodology in four or more selected countries starting from 1983, and subject to the review mentioned above

UNEP, FAO

Objective 3

To collect, collate, interpret and publish background information on desertification, its natural, social and economic causes and effects, and changes with time in the areas affected (Conference recommendations I, 4, 10, 12, 17, 18, 23).

Strategy

To make information and data scattered world-wide more accessible and promote its more fruitful use by building up UNEP as the centre for desertification knowledge.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Review of Governments' replies to questionnaires on such matters as basic data, desertification problems and projects, and plans undertaken by the Governments, with emphasis on activities at national and international levels	1982-1983	UNEP, appropriate United Nations agencies		The establishment of UNEP as a centre capable of providing useful information and giving advice on desertification problems, as well as on action planned or under way
(ii) Interpretation and analysis of data at national level, in three countries each year. This will include analysis of information on methods of combating desertification, identification of the best technologies which can be transferred, assessment of economic and social as well as legal policy constraints, and estimation of the impact	1982-1983	UNEP, appropriate United Nations agencies	To be compiled into annual publications from 1982	Publications

Objective 4

To prepare for a first general assessment of progress in the implementation of the Plan of Action (recommendation 27, para. 103 (d) and para. 9 of the Plan of Action).

Strategy

Preparation of Governments, the United Nations system, and intergovernmental and non-governmental organizations for a stock-taking occasion in 1984; reminding them of their roles and assisting in achieving more and better results in the implementation of the Plan of Action.

Elements of the strategy

(i) On the basis of consultations in 1981, convene a small advisory panel to suggest elements of the preparations, including various studies and recommendations

(ii) Contacts with Governments and agencies, preparation of documents, etc. referred to under (i) above

Objective 5

To help to establish national machineries and national plans of action to combat desertification, integrated within national development plans, for nine countries from 1981-1983, particularly least developed countries (Conference recommendations 22, 23).

Strategy

To catalyse action by Governments and, on request, to provide assistance to least developed countries in preparing national plans and setting up national mechanisms to co-ordinate implementation of anti-desertification activities.

Elements of the strategy

(i) Post-Conference meetings convened by regional commissions to review progress in the implementation of the Plan of Action and to attract Governments' attention to recommendations 22 and 23

(ii) Twelve short-exploratory missions to developing countries, particularly least developed countries

<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
First half of 1982	All United Nations agencies	1984 is taken as a stock-taking year, with assessment activity starting 1981	The preparation in 1984 of an accurate general assessment of progress as a basis for future action
1982-1983	All United Nations agencies		
ECA and ESCAP in 1982 ECLA and ECWA in 1983	UNEP, regional commissions and agencies	UNEP will provide support through participation and financial assistance to needy countries to attend meetings and related expenses	Establishment of national machinery and national plans of action
1982-1983	Joint UNEP/agency missions	Six missions each year	

Elements of the strategy

(iii) Full-fledged planning missions to countries requesting such assistance

Achievement indicator

Remarks

Main actors

Date of action

About three missions a year

Joint UNEP/ agency missions

1982-1983

Objective 6

To assist in locating sources of funding for desertification control projects prepared for submission to the Consultative Group for Desertification Control (Conference recommendation 28).

Strategy

To help Governments of desertification-prone countries to identify and formulate priority anti-desertification projects.

Elements of the strategy

(i) Preparation for and sending of two-month project formulation missions to countries with a view to finalizing five such projects each year

Date of action

1982-1983

Main actors

Joint UNEP/ agency missions

Remarks

Achievement indicator

Establishment of high priority anti-desertification projects which are technically sound and cost-effective, and likely to attract assured funding by donors at Consultative Group meetings

(ii) Submissions of 5 projects to the Consultative Group each year

UNEP

Or as decided by the Consultative Group

1982-1983

Objective 7

To co-ordinate and stimulate desertification control activities within the United Nations system (Conference recommendation 27).

Strategy

Utilize the Inter-Agency Working Group on Desertification (IAWGD) as an instrument for inventorying on-going activities, conducting joint programming, and discussing specific issues and which co-operation is required (e.g. planning missions, training, research, etc).

Elements of the strategy

(i) Annual meeting of IAWGD to review the activities as well as an analysis of current and programmed future actions to be submitted to ACC

<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
September each year	Members of IAWGD	UNEP expects agencies to provide assistance amounting to 24 man-months or part of it for performing the tasks of IAWGD and other functions as determined and agreed upon between UNEP and agencies	Establishment of IAWGD as an effective and main instrument of co-operation and co-ordination of its members' activities in the implementation of the Plan of Action. More specifically, successful execution of its functions outlined in para. 24 of document UNEP/GC.7/5

(ii) Meetings on specific joint actions to be undertaken

March each year
Members of IAWGD

Objective 8

To assist OAU in formulating and implementing projects on restoration, rehabilitation and better management of natural resources (Conference recommendations 2. 5; General Assembly resolution 34/185; OAU Council of Ministers resolution 734 (XXXIII), Governing Council decision 7/13 C).

Strategy

Pursuant to the above tests, UNEP is expected to give full assistance to OAU in formulation and implementing the two projects indicated below.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Integrated development of the Fouta Djallon massif: participation in meeting and missions as a follow-up to activities in 1981	1982-1983	UNEP, UNSO, FAO, WMO, UNESCO, in collaboration with OAU	UNEP contribution in 1982 and 1983 depends on decisions taken in 1981	Successful completion of the project formulation and its inclusion in the UNEP programme for desertification control
(ii) Hydrogeological map of Africa	1982-1983		Action depends on the appropriate decisions by the OAU Council of Ministers	Effective contribution to the preparation of the map

Objective 9

To collaborate with Governments in the combat of desertification through conservation of flora and fauna in desertification-prone countries (Conference recommendation 10).

Elements of the strategy

<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
1982-1983	UNEP, IUCN, WWF		Adoption of needed regulations by Governments, and ratification of the Convention on Endangered Species of Wild Fauna and Flora

Objective 10

To provide advice to developing countries in arid zones on planning for sustainable development. (Conference recommendation 4).

Strategy

The development of industry, mining, towns and transport in arid areas is accompanied by various ecological changes, in many instances harmful. Industrialization of arid areas can create the necessary energy and make it possible to use advanced technology in the implementation of measures to combat desertification. The combination of industrialization and urbanization with the development of agriculture could be used as a successful tool in combating desertification.

Elements of the strategy

	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) To undertake field missions to 11 countries which have agreed to participate in the project, in co-operation with the USSR Government	1982	UNEP, USSR Government, UNIDO, and relevant United Nations agencies	The project started in 1980 and is scheduled to terminate in 1982. However, in view of a late start and some other delays, it is likely to be extended to 1983	The establishment of integrated development schemes, projects and plans in arid regions of 11 countries

(ii) To hold an international symposium to exchange information on regional development plans and strategies for arid zones in developing countries

Objective 11

Training and education

To build up scientific and technological capacity in affected countries by promoting the transfer of desertification control methods successfully utilized in other countries (Conference recommendations 18 and 20).

Strategy

To establish training programmes and courses in desertification prone regions or countries. As a starting point, to organize these courses in countries experienced in desertification control, to train high- and mid-level technicians from developing countries.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Continuation of the training courses already established in the USSR	Second and third quarters of each year	UNEP, UNESCO, FAO	A joint UNEP/USSR project terminates in 1981. However, the project will be extended for two years	An increase in trained manpower and the successful application, in the trainees' home countries, of the methods learned
(ii) Continuation of the training courses already established in China	August each year			
(iii) Continuation of the project on combating desertification in the Mediterranean region to provide training for 30 participants from Spanish-speaking countries	1982-1983	UNEP, appropriate agencies, CIFCA		
(iv) Initiation in 1982 of a training programme for the African region, other than Sudan-Sahelian and North Africa countries (Botswana)	1982-1983	UNEP, appropriate agencies		
(v) Initiation in 1983 of a training programme for West Asian and North African countries (Tunisia)	1983	UNEP, appropriate agencies		

Objective 12

To assist in the development and promotion of educational programmes by the preparation, publication and distribution of teaching and management manuals on specific topics of anti-desertification technology and management (Conference recommendation 20).

Strategy

This task is to be accomplished in co-operation with the relevant United Nations bodies. The Desertification Conference recommended high priority for education, and for maximum benefit, the topics to be addressed have to be carefully selected.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Preparation of three manuals annually	1982-1983	UNEP, UNESCO, FAO, ONU, WMO, other appropriate agencies, CIFCA	Additional manuals and monographs will be prepared by staff from agencies other than those listed in the Plan of Action	Evidence that target groups benefited from manuals as well as the inclusion of anti-desertification material in the curricula of educational and management institutions
(ii) Convening of a small advisory committee for editing, etc. of the manuals	1982-1983			

Objective 13

Scientific research and technology

To promote the type of research needed to increase the effectiveness of efforts to combat desertification, and to strengthen national capabilities in science and technology, as well as regional desertification control, capabilities.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Follow-up of in-house discussions on the needs and priorities for research. This will be supported by consultations with appropriate United Nations agencies and the use of consultants to synthesize the outcome of these consultations	1982	UNEP, UNESCO, FAO, other appropriate agencies	Depending on decisions regarding the establishment of a documentation centre, manpower and budget for 1982 and 1983 will be revised. The present allocations for 1982 and 1983 are proposed on the basis of a documentation centre being established outside UNEP, in a regional research institute	Filling gaps in scientific research and evidence of increased capabilities of institutes concerned with research on arid and semi-arid land problems
(ii) Following the above, seed-money will be provided for selected projects on energy, with agency participation	1982-1983	UNEP, relevant United Nations agencies		
(iii) Development of new technologies to combat desertification or adding a research component into anti-desertification projects	1982-1983	UNEP, relevant agencies, national and regional research institutes	UNEP will provide seed money as incentive for research into these matters	

Objective 14

Technical assistance

To assist affected countries by desertification in identifying through the Consultative Group for Desertification Control, donors for financing anti-desertification projects, and occasionally to provide seed money for implementation of such projects, as well as providing ad hoc advisory assistance.

Strategy

Organization of a meeting of requesting and donor Governments and other financial institutions, and thereafter of follow-up to ensure implementation of anti-desertification projects.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Convening meetings of the Consultative Group for recipient countries and donor countries/institutions, co-sponsored by UNEP and seven other United Nations organizations, to serve the Group's two functions of fund-raising and information and awareness	1982-1983	Co-sponsors of the Consultative Group and other member agencies, as well as donor Governments and organizations	It should be noted that the technical function of the Consultative Group, that of skilled preparation of projects has been included under objective 6, elements (i) and (ii)	Assured financing and implementation of projects

(ii) Providing a mechanism for follow-up of Group meetings, including allocation of seed money for projects to ensure speedy implementation

1982-1983
United Nations agencies identified as donor

(iii) Extending assistance to developing countries on an ad hoc basis, based on special requests concerning anti-desertification activities

1982-1983
UNEP, UNDP

Objective 15

Information

Dissemination of information to raise awareness of the need to control and combat desertification. The objective is to reach Government officials, scientists, and educators, as well as the general public (Conference recommendation 20).

Strategy

To employ all information media to reach different sectors of the population of affected countries.

Elements of the strategy

Date of action

Main actors

Remarks

Achievement indicator

(i) Preparing, compiling, editing and publishing at six-monthly intervals the Desertification Control Bulletin, giving information on programmes, results and problems related to desertification control

June and December of 1982 and 1983

UNEP

Degree of awareness of desertification problems among the general public and decision-makers

(ii) Use of films produced for the Desertification Conference, material prepared for radio broadcasts, and articles/cartoons for publications in newspapers for mass media circulation

1982-1983

UNEP

(iii) Preparation of an annotated directory providing information on individuals and institutions involved in anti-desertification activities in different countries

1982-1983

UNEP

Implementation of the Plan of Action in the Sudano-Sahelian region through UNO (UNEP/UNDP joint venture)

(d) Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	4,000,000	5,000,000
UNESCO Regular Programme	400,000	400,000
UNESCO Extrabudgetary	1,500,000	1,500,000

3. Tropical forests and woodlands
(budget sub-line 1102)

(a) Background

71. Principles 2, 3 and 4 and recommendations 24, 25, 26, 27 and 28 of the Stockholm Declaration and Plan of Action stress the need for international co-operation in the gathering and dissemination of all relevant information necessary for proper management and wise utilization of tropical forests, which deserve priority attention not only because of their enormous environmental significance on a global scale but for the value of their resources to human development at the regional and national levels.

72. Governing Council decisions 7/6 A and 8/9 call for a concerted international effort to develop an action plan for the wise utilization of tropical forests and woodlands. In response to the first of these decisions, an Expert Meeting on Tropical Forests (Nairobi, 25 February - 1 March 1980) formulated a set of recommendations and proposed that goals should be set for the implementation of a programme of activities in the short, medium and long term. By decision 8/9, the Council took note of the Meeting's recommendations, which have since been circulated to Governments for comments, and of the goals formulated by the Executive Director in response to the meeting's proposal. As a follow-up, a second expert group meeting is due to be held by the end of 1981 to formulate a plan of action for the wise utilization of tropical forests.

73. In promoting this plan, Governments, who have the permanent and primary responsibility for the natural resources in their territories, will be encouraged and assisted in adopting appropriate management practices designed to ensure the optimum flow of goods and services from tropical forests, both at present and in the future. Inadequate knowledge about tropical forest and woodland ecosystems has proved to be a severe handicap to their management, while the often unco-ordinated application of existing knowledge in this process has tended to minimize the productive impact which proved technology could make. More effort must therefore be directed towards generating relevant knowledge, organizing it into management guidelines and making them widely available for practical application.

(b) Objectives

74. The over-all objective in this area is the formulation and implementation of plans and policies for international action. These are a necessity for aiding Governments in the sound management of tropical forests, including their conservation, and ensuring their wise use for the greatest benefit to mankind. They will complement and enhance such current efforts as those of the MAB Programme of UNESCO and similar activities of FAO.

(c) Activities to advance the objectives

Objective 1

To develop internationally co-ordinated action plans and to assist in the accelerated implementation of these plans for the ecologically sound management and protection of tropical forests and woodlands.

Strategy

Elaboration and promotion of concepts and guidelines of ecological management in tropical forest areas.

Elements of the strategy

- (i) Elaboration and promotion of concepts of ecological management in tropical forest areas.
- (ii) Establishment and strengthening of integrated pilot projects for research, training and demonstration in tropical forest areas, including development of an inter-regional project on scientific basis for rational management of tropical forests.
- (iii) Continued development of guidelines and management tools for indigenous tropical forest and woodland ecosystems and communities which would result in regular and sustained production, and preparation of case studies.
- (iv) Promotion and assistance in the implementation of legal regimes for sound tropical forest management and protection.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Elaboration and promotion of concepts of ecological management in tropical forest areas.	1982-1983	FAO, UNESCO, IUCN, UNEP, ICRAF		Publication of plans
(ii) Establishment and strengthening of integrated pilot projects for research, training and demonstration in tropical forest areas, including development of an inter-regional project on scientific basis for rational management of tropical forests.	Ongoing	UNESCO in co-operation with FAO and UNEP	MAB Project I	Existence of about 15 complementary pilot projects in the humid and sub-humid tropics with application of results to improve land management in at least 10 countries
(iii) Continued development of guidelines and management tools for indigenous tropical forest and woodland ecosystems and communities which would result in regular and sustained production, and preparation of case studies.	1982-1983	FAO, UNESCO, UNEP, IUCN, Governments		Publication of results of case studies on sustained productivity of forests and woodlands and the distribution of this information to governments and interested United Nations agencies and non-UN organizations
(iv) Promotion and assistance in the implementation of legal regimes for sound tropical forest management and protection.	1982-1983	FAO, UNEP, Regional Commissions, IUCN, Governments	See also under Environmental Law	Legal instruments and conventions demonstrating extent to which tropical region conventions (e.g. Amazon) emphasize co-operation on management issues

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(v) The acceleration of management research in multiple forest practices, including agro-forestry, community and energy forestry	1983	FAO, UNESCO, World Bank, UNEP, regional commissions, UNU, ICRAF, Governments		Case studies and pilot projects

Objective 2

To obtain a continued flow of information on the state of forest resources on a global basis to aid Governments in reversing any negative environmental effects.

Strategy

To collect, evaluate, classify and provide information to Governments and interested organizations on trends and developments in regard to afforestation and deforestation in tropical areas and forest policy issues.

Elements of the strategy

(i) The collection, evaluation and dissemination of information on:

- Trends in regard to removal of tropical forest cover, its replacement through various forms of afforestation and reforestation

Date of action

Continuing

Remarks

These are second phase assessment activities. A general situation survey is expected in 1981, after which activities will move to concentrating on specific regions and countries

Achievement indicator

Periodic issue of data sheets and country assessment statements and reports

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
- The Ecology and land use policies in tropical forest areas	1982	UNESCO, IUCN, UNEP, FAO, Governments	This is continuing work already started in collaboration with UNESCO, FAO and IUCN	The publication of existing knowledge on tropical forest ecosystems and its dissemination to Governments and interested United Nations and other bodies. Periodic interagency meetings will take place to review the situation
- Methods which ensure the maintenance of resources at adequate levels	Continuing	UNESCO, UNU, FAO, UNEP, ICRAF, Governments	Continuation of work already started by some national institutions, e.g. the United States National Academy of Sciences	Wide dissemination of handbooks and other materials with information on the diversity of tropical forest communities; catalogues of the economic use of specific populations and species of wild plants and animals

Objective 3

To secure the maintenance of ecological processes and the conservation of critical habitats and species.

Strategy

To advocate the expansion of protected areas and increased conservation of unique forest species and areas, and encourage and to support the generation of new information and knowledge on the functioning of tropical forest ecosystems.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(1) Development of principles, criteria and guidelines for the selection, establishment and management of protected tropical forest areas and increased research thereon.	1983	IUCN, UNESCO, FAO, UNEP		Publication of the criteria to be used in further demarcation of protected areas and parks

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(ii) The conservation of ecologically significant, critical and/or unique forest and wildland habitats through appropriate management practices, particularly the extension of the "biosphere reserve" concept	Continuing	IUCN, FAO, UNESCO, UNEP, Governments	Also relevant to Genetic resources and wildlife	Publication of a list indicating sites of interest and its distribution to Governments, United Nations and other agencies
(iii) The conservation of specific forest genetic resources	Continuing	UNEP, FAO, IUCN, IBPGR, UNDP	See under Genetic resources. A second phase of this activity is envisaged	
(iv) To support conservation in particularly vulnerable areas by mobilizing local interest and establishing appropriate support units	Continuing	FAO, UNEP, UNESCO, IUCN, NGOs		Creation of awareness among local populations

Objective 4

To train specialists involved in tropical forest management, strengthen centres for specialist training and general education in tropical forest and woodland ecosystems, and promote dissemination of public information and awareness on tropical forests and woodlands.

Strategy

To assist in establishing documentation centres on tropical ecology, expanding training opportunities and promoting personnel exchange programmes.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Assistance in the establishment of documentation centres on tropical forest ecosystems with facilities for computer courses and a system for information and document circulation	1982-1983	UNESCO, UNDP, FAO UNEP, IUCN, Governments	UNDP, UNESCO and UNEP have agreed to establish the first such centre at Yaounde, United Republic of Cameroon	The establishment of the first documentation centre in Yaounde, collection and circulation of relevant documents by the centre
(ii) Seminars, workshops and training courses on forest development conservation and management	1982-1983	UNESCO, UNEP, Regional Commi- ssions, IUCN, Governments		Publication of booklets
(iii) The production and distribution of newsletters highlighting activities of forest development, conservation and management programmes	1982-1983	UNEP, FAO, UNESCO		Newsletters and information booklets
(iv) Development of a programme for citizen education	1983	UNEP, UNESCO, IUCN, Governments, NGOs		Publication of a curriculum and handbook of aids
<u>(d) Budgetary implications</u>				
			1982 \$US	1983 \$US
UNEP			900,000	1,300,000
UNESCO Regular Programme			400,000	400,000
UNESCO Extrabudgetary			1,200,000	1,200,000

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

(a) Background

75. Principles 2, 3 and 4 and recommendations 38, 55, 60 and 61 of the Stockholm Declaration and Action Plan summarize the international concern with environmental impacts on unique ecosystems of international significance. Several mountain ranges, islands, coastal and fresh-water bodies are among the world's unique ecosystems, and the authority for UNEP's activities in relation to them is given by Governing Council decision 29 (III).

76. The major international activity dealing with ecological issues pertaining to these ecosystems is the Man and the Biosphere (MAB) Programme of UNESCO. Recent projects aim at providing an improved basis for the integrated management of coastal and fresh-water ecosystems (MAB Project 5), mountain ecosystems (MAB Project 6) and island ecosystems (MAB Project 7). Lessons from the recently concluded UNEP/UNESCO collaborative integrated pilot project in the Andean region can be applied in formulating management plans for similar areas elsewhere.

77. The Regional Seas Programme has also generated plans for coastal areas of some five regions, and will cover other regions as other Action Plans are completed. As these management plans are completed, future emphasis will be placed on mobilizing governmental action in their implementation.

(b) Objectives

78. The over-all objective of the programme is to assist in generating useful knowledge of mountain, island, coastal and other related ecosystems which would assist Governments in managing them wisely, and to supply guidelines and information as necessary to this end.

(c) Activities to advance the objectives

Objective 1: Mountain ecosystems

To promote and publicize guidelines for proper land use, incorporation of ecological principles in development projects, enhancement of water catchment areas and planned tourist and migration activities.

Strategy

To hasten recognition and definition of the problems inherent in man's interaction with mountain environments, to work out management requirements appropriate to different ecologically sensitive mountain ecosystems, and to promote integrated pilot projects.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicators</u>
(i) Review of the situation pertaining to steep mountains (e.g. Himalayas) as a case study on inter-relationships between population, resources, environment and development	1982	UNESCO, FAO, IUCN, UNEP		Production and distribution of a report outlining the existing situation
(ii) Continuation of pilot projects on appropriate land use techniques (including tourism), stressing multiple land use systems and the ecological principles for integrated development of mountain ecosystems	1982-1983	IUCN, UNESCO, UNEP, FAO, Governments	MAB 6	Publication and dissemination of information and guidelines on the appropriate management techniques necessary for optimal utilization of various mountain ecosystems, protection against disasters, and the assessment of human pressure impacts
(iii) Promotion of biosphere reserves in high mountains as a means of protecting genetic resources and the environment	1983	UNESCO, UNEP, IUCN		The establishment of protected areas See also conservation and Genetic Resources

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iv) Development of regional research and training institutions on mountain problems in the Andes and the Himalayas	1983	UNESCO, FAO, UNEP, Governments		Start of negotiations with other agencies and Governments on the modalities for establishing such institutions

Objective 2: Coastal ecosystems

To conclude elaboration of management guidelines and assist Governments to undertake activities and management for the sustainable exploitation of coastal ecosystems.

Strategy

To hasten man's awareness of the delicacy and vulnerability of coastal ecosystems and to develop management techniques for their sustainable utilization.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) General review and analysis of existing studies on coastal ecosystems, based on information from Regional Seas Programme publications and the proposed workshop in 1981 in the Caribbean, to identify gaps and priorities	1982	UNESCO, FAO, UNEP		Publication of the review
(ii) Development of one inter-regional project on coastal ecosystems management on the basis of priority identified in (i) above	1983	UNESCO, FAO, UNEP, Governments	To be selected from one of the areas already covered by the Regional Seas Programme	Initiation of the project

Objective 3: Island ecosystems

To initiate activities designed to improve the quality of island environments and to control the impact of tourism and other external pressures.

Strategy

To accelerate man's recognition and definition of the problems inherent in his interaction with islands, and to ensure proper management of these ecosystems with a view to improving environmental quality.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Analysis of information on environmental quality of islands, especially those that are vulnerable to economic and industrial repercussions, drawing on the Caribbean Action Plan under the Regional Seas Programme	1983	UNEP, UNESCO, IUCN, Governments		Publication of a report on the findings

Objective 4: Fresh-water marshes, swamps and other aquatic ecosystems

To initiate activities necessary for the appropriate management of fresh-water marshes, swamps, and other aquatic ecosystems.

Strategy

To assess the impact of activities external to these ecosystems; to develop pilot projects which demonstrate the integrated approach to development and to restore non-tropical inland waters.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Studies on the assessment of impacts of population pressure, migration, resettlement and tourism	1982	SIL, IUCN, UNEP, UNESCO	Part of this work was started in 1979 in collaboration with SIL	Publication and dissemination of information on the impact of activities originating from without the ecosystems

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(ii) Project to monitor the chemical, physical and biological nature of smaller water ecosystems including their catchment areas	1983	SIL, IUCN	This is a continuation of work already started in collaboration with SIL in 1979. Results to be reviewed by UNEP	Publication and distribution of the results of this exercise
(iii) Develop and promote one project designed to demonstrate integrated approach to development	1983	SIL, IUCN, UNDP, UNEP, UNESCO, Governments		Making various interested agencies aware of this pilot project and the adoption of its results to over-all management of the ecosystem in the relevant region
(iv) Promotion of measures designed to restore non-tropical inland waters i.e., the control of eutrophication	1983	SIL, IUCN, UNEP, UNESCO		Publication of guidelines on prevention of eutrophication and restoration of eutrophic inland waters

Objective 5: Ecosystems of international significance

To promote intergovernmental agreements to establish and protect areas representing unique ecosystems of international significance.

Strategy

To search and identify relevant unique areas of interest in different parts of the world with a view to declaring them protected areas through international agreements.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Interagency agreement on the list of unique areas of interest around the world not yet identified	1982	IUCN, UNEP, Governments	Relevant to conservation	Publication and distribution of a list of these areas
(ii) Initiation of negotiations necessary for the conclusion of international agreements declaring these as protected areas	1983			Conclusion of necessary international agreements declaring these ecosystems protected areas

(d) Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	300,000	300,000
UNESCO Regular Programme	400,000	400,000
UNESCO Extrabudgetary	600,000	600,000

5. Soils
(budget sub-line 1106)

(a) Background

79. Principles 2 and 3 and Recommendations 20 and 22 of the Stockholm Declaration and Action Plan were directed towards promotion of co-operation in international acquisition of knowledge and transfer of experience on soil capability, conservation and on the nature of processes of soil degradation and loss between the international organizations concerned in this area. Subsequently, this concern was reflected by the Governing Council in decisions I (I), 8 A (II), 29 (III), 47 (IV), 82 (V), 6/2, section II, 6/5, 7/3, 7/6 B, 8/6 and 8/10. The relevant 1982 goal states: "Publication of guidelines to control soil degradation" and is closely related to the goal on the implementation of the Plan of Action to Combat Desertification. Council decision 8/10 called for a Plan of Action to implement a world soils policy. Pursuant to the decision, much of the effort in 1980 and 1981 has gone into the elaboration of this policy and the preparation of the plan of action. Implementation should begin in earnest at the commencement of the 1982-1983 biennium, and will be accelerated through 1984-1989. Much of this work will coincide with FAO's response to the call of the World Food Conference, 1974, for the elaboration of a World Soil Charter.

80. Other important accomplishments bearing on the objectives of this programme include the completion by FAO and UNESCO of the Soil Map of the World, and the preparation by FAO and UNEP of the provisional methodology for soils degradation assessment and the soil degradation map for Africa. FAO, WHO, UNFPA and IISA have made a first attempt at relating zonal productivity with population pressures and human demands, and this work is expected to continue. Significant ongoing activity in soil management also exists in the network of international research centres sponsored by CGIAR. Inputs from professional non-governmental sources are co-ordinated through close collaboration with the International Soil Science Society.

(b) Objectives

81. The over-all objective of the soils programme is to elaborate an internationally accepted soils policy framework within which to assist Governments in protecting arable soil, and to this end to develop a system for keeping global land and soil resources, their productivity and status under constant surveillance, and to elaborate and promote guidelines for integrated management of land and soil resources.

(c) Activities to advance the objectives

Objective 1: Soil policies

To define the most important elements of a world soils policy and commence the implementation of the plan of action.

Strategy

In close co-operation with FAO, UNESCO, ISSS, and through consultations and experts, to prepare a world soils policy and a plan of action for its implementation.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Convening of experts to adopt the final report on world soils policy	1982	UNEP, FAO, UNESCO, ISSS and other governmental and non-governmental organizations	UNEP with FAO to convene the meeting	Agreement on a statement on world soils policy; adoption of a plan of action on soil policies
(ii) Co-sponsoring the twelfth international Congress of ISSS	February 1982	UNEP, FAO, ISSS, UNESCO	UNEP to co-sponsor the Congress and to use the occasion to review the elements of the world soils policy and plan of action	
(iii) Implementation of the plan of action for integrated soil resources management and protection	Ongoing	UNEP, FAO, CGIAR, centres and experts groups	Selective implementation of policy elements throughout the medium-term plan period	

Objective 2: Monitoring methodologies

To continue to develop and improve methodologies for the measurement and monitoring of land/soil productivity with a view to producing guidelines for better management, and to publicize such methodologies and maps as are already available, for use by Governments in their own efforts.

Strategy

Through panels and experts drawn from Governments, NGOs, international organizations and regional and national institutions, to collect and evaluate data for use in developing appropriate methodologies and guidelines.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Preparation and testing of an international system and criteria for the classification and monitoring of world soil resources	Continuing	UNEP, FAO, UNESCO, ISSS, IFIAS, SCOPE, WMO and NGOs	UNEP, FAO, SCOPE	Report on productive land soil; completion of a system for international soil classification and guidelines on the management of marginal agricultural areas
(ii) Surveillance of land transformation and its consequences for soil resources in vulnerable humid and arid tropical areas	Continuing	UNEP, FAO, UNESCO, ISSS, IFIAS, SCOPE, WHO and NGOs	UNEP, FAO, SCOPE	Report on productive land soil; completion of a system for international soil classification and guidelines on the management of marginal agricultural areas

Objective 3: Soil degradation and effective management strategies

To achieve better and quantitative understanding of the dynamics of soil degradation in order to promote effective soil conservation measures and management practices.

Strategy

In co-operation with FAO, with CGIAR network of institutions, and other agencies, launch a number of case studies in conditions of special environmental constraints in order to develop effective soil conservation measures and integrated management.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(1) Undertake case studies of soil conservation problems in selected regions, including identification of social economic and legislative constraints	Continuing	UNEP, FAO, SCOPE, IFIAS, IIASA, UNESCO, CGIAR	UNEP/FAO jointly to organize case studies in selected regions and countries	Reports and publications on experience at regional and national levels in effective control of soil degradation and soil loss
- Erosive effects in tropical areas	UNEP, FAO, UNESCO, IITA on basis of information collected	IITA to carry out project studies in tropical areas		
- Soils under irrigation and rainfed conditions in dry areas and problems of salinity and alkalinity				
(ii) Meetings of ad hoc regional panels to review major achievements in soil conservation	1983	UNEP, FAO, ISSS		Reports and publications on experience at national level in effective control of soil degradation and soil loss
(iii) Wide transfer and dissemination of effective measures on land/soil conservation in vulnerable tropical areas	1983	UNEP, FAO, UNESCO, IITA on basis of information collected	IITA to carry out project studies	

Objective 4: Zonal capacities of land resources

To relate zonal and ecological productivity and land carrying capacity to future population requirements.

Strategy

In close co-operation with FAO, to extend studies already under way on the subject in order to provide complete information at the global level on the interrelatedness of productivity to resource demand.

Elements of the strategy

(i) Extension of the FAO/UNFPA/IIASA project on zonal food projection, population, technology inputs and land/soil conservation studies

(ii) Identification of social, economic and legislative constraints on the introduction of effective land/soil conservation policy in developing countries

Objective 5: Training and manpower development

To promote training courses in land and soil conservation and integrated management.

Strategy

To draw attention to developing countries' needs in terms of technical education and exchange of information, and to assist these countries in increasing their trained manpower and improving their access to technical information.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Extension of the FAO/UNFPA/IIASA project on zonal food projection, population, technology inputs and land/soil conservation studies	Continuing	UNFPA, FAO, UNEP, IIASA	FAO to submit next phase studies for deliberation. See also budget sub-line 1305	Reports to respective zones (continents) on population growth and food production under different technology inputs and conservation measures
(ii) Identification of social, economic and legislative constraints on the introduction of effective land/soil conservation policy in developing countries	1983	UNEP, IFIAS, FAO	IFIAS to carry out studies and submit the results	Publication of a report
<u>Objective 5: Training and manpower development</u>				
To promote training courses in land and soil conservation and integrated management.				
<u>Strategy</u>				
To draw attention to developing countries' needs in terms of technical education and exchange of information, and to assist these countries in increasing their trained manpower and improving their access to technical information.				
<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Organization of training courses, expert meetings on new research areas and educational programmes, and promotion of effective soil management extension services	1982-1983	UNEP, FAO, UNESCO, OGIAR, ISSS, SCOPE, IFIAS		Training of personnel and publication of a UNEP/UNESCO report on land/soil environmental, educational and research programmes and soil management extension services

(d) Budgetary implications

	1982 \$US	1983 \$US
UNEP	1,250,000	1,600,000
UNESCO Regular Programme	50,000	50,000

6. Water
(budget sub-line 1107)

(a) Background

82. Recommendations 51-55 of the Stockholm Action Plan, on various aspects of water resources management, were further developed for international agreement by the Mar del Plata Plan of Action adopted by the United Nations Water Conference, which reaffirmed 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. Water has a place in practically all programmes sponsored by the United Nations system, especially the International Drinking Water Supply and Sanitation Decade launched by the General Assembly in November 1980, in which WHO, UNDP and many other organizations are involved. UNESCO is also conducting major intergovernmental programmes through IHP and MAB. UNEP has concentrated on water quality and management of water resources, and the relevant Governing Council decisions include: 1 (I) section III; 8 A (II) section I; 27 (III); 31 (III); 55 (IV); 82 (V); 6/2 and 8/6 section IV. Goal 7 for 1982 calls for "Implementation of demonstration projects for rational management of water resources".

(b) Objective

83. The over-all objective of this programme is to ensure the availability of water of adequate quality and quantity to all, and to promote its integrated and rational utilization.

(c) Activities to advance the objectives

Objective 1

To implement demonstration projects in selected river basins on integrated approaches and methods for the conservation and utilization of water resources in harmony with other natural resources.

Strategies

To study and analyse a number of specific problems of water resources development and management at different levels, and related environmental problems, and to identify appropriate project sites, engage in consultations with the parties concerned, and conduct studies on the basis of which demonstration activities will be undertaken.

Elements of the strategy

(i) Case studies on the dynamics of wetland ecosystems and shallow water bodies

(ii) Preparation of guidelines based on, inter alia, evaluation of case studies of large dams, their review at a workshop and in a seminar

(iii) Continuation of demonstration project in Euphrates Basin (Syria) on environmental aspects of irrigation development and management

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Case studies on the dynamics of wetland ecosystems and shallow water bodies	Ongoing	SCOPE, UNESCO MAB No. 5, UNEP, COWAR, UNTECOL	Activities started in 1980	Improvement of knowledge of wetland ecosystems and shallow water bodies and publication and dissemination of guidelines
(ii) Preparation of guidelines based on, <u>inter alia</u> , evaluation of case studies of large dams, their review at a workshop and in a seminar	Ongoing	UNESCO (IHP, MAB No. 10), UNEP, WHO, CMEA, Governments	UNEP will co-operate with UNESCO which, working through MAB Committees and IHP, will study field projects upon which the guidelines will be developed. Activity started in 1981	Publication and dissemination of guidelines for rational management of large dams
(iii) Continuation of demonstration project in Euphrates Basin (Syria) on environmental aspects of irrigation development and management	Ongoing	UNEP, UNDP, FAO, WHO, UNIDO, ECWA	FAO and national governmental institutions will play a leading role in close co-operation with UNEP and UNDP. The main phase of the project started in 1981	Wide dissemination of the experience gained in the implementation of the project through training and publications

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iv) Implementation of a field project in the Lower Mekong River Basin (the Mekong River Delta) to demonstrate the solution of environmental problems in deltaic areas	Ongoing	ESCAP (the Mekong Committee) FAO, UNDP, UNEP, Governments	Started in 1981	Improvement of water planning and management process in the Mekong Delta and in Lower Mekong River Basin. Dissemination of the results of the project through training and publications
(v) Implementation of programmes on the development and application of new methods for the assessment and management of national water resources with due regard to environmental aspects	1982-1983	FAO, UNESCO, WHO, CNRET, UNEP		
(vi) Implementation of a field project in Latin America to demonstrate methods for integrated and environmentally sound planning and management of water resources in large river basins, which will include the preparation of appropriate demonstration sites, implementation of training programmes and dissemination of the results of the above activities	Ongoing	ECLA, UNEP, UNESCO, Governments	Preliminary studies started in 1981	Improvement of water planning and management practice in Latin American river basins
(vii) Implementation of project on river basin planning and management (Rufiji River Basin, United Republic of Tanzania)	1982-1983	FAO, WHO, UNEP	UNEP will study environmental changes and make recommendations for the inclusion of environmental dimensions in the planning for the river basin	

Objective 2

To develop integrated methods for management of water resources of the lithosphere.

Strategy

To elaborate techniques for the management of ground water resources and geological processes relating to water.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator:</u>
(i) Continued implementation of the project on rational use and conservation of ground water. Studies on ground-water pollution and exhaustion, preparatory work for demonstration of monitoring of mudflows and landslides, and conducting of a training programme within the project	Ongoing	UNEP, UNESCO, Governments	Project started in 1980	Improved knowledge through conducting workshops, training courses and publications
(ii) Selected demonstration projects in Mexico and Nigeria; in the former on land sinking due to ground-water use, and in the latter, on ground-water pollution	1982	UNESCO, Governments		Increased knowledge of ground water dynamics

Objective 3

To contribute to the efforts to achieve the objectives of the International Drinking Water Supply and Sanitation Decade (1981-1990).

Strategy

To demonstrate integrated and environmentally sound water supply and sanitation techniques in rural areas of developing countries. To develop methods for assessing and protecting drinking water quality in rural areas.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Field studies to demonstrate the provision of safe drinking water and sanitation within a large scale irrigation scheme in the Sudan	Ongoing	WHO, UNEP, Governments	UNEP to contribute to a WHO study on vector-borne diseases in the area	Improved sanitary conditions in the area, dissemination of experience through publications
(ii) Field demonstration of safe rain and storm water harvesting	1982-1983	UNICEF, UNESCO, UNEP, Governments	Governments and UNICEF as a co-operating agency to play a major role	
(iii) Demonstration on integrated management of small impoundments for safe rural water supply	1982	WHO, UNESCO, UNEP		

(d) Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	2,150,000	2,500,000
UNESCO Regular Programme	600,000	600,000

7. Genetic Resources
(budget sub-line 1108)

(a) Background

84. The Stockholm Action Plan included a number of recommendations, in particular recommendations 28 and 39-45, relating to the conservation, evaluation and utilization of genetic resources. Subsequently, the Governing Council of UNEP sharpened the focus on genetic resources in successive decisions - 1 (I) section III, 8 A (II) section I, and 29 (III) - and decided that the establishment of genetic resources centres should be a concentration area (decision 47 (IV), sect. I). The establishment of a global network of microbiology resources centres to conserve microbiological resources and apply them in environmental management has been set as goal No. 10 to be achieved by 1982 (decision 82 (V)). A thematic joint programming meeting for the United Nations system (October 1979) examined an overview (UNEP Report No. 5 (1980)) and agreed on reformulated objectives and strategies which were approved by decision 8/6, section IV, paragraph 1 (a).

85. While Governments and scientific organizations have the direct responsibility for documentation, conservation and environmentally sound deployment of genetic resources, the main direction of UNEP's efforts, in collaboration with other members of the United Nations system, has been to co-ordinate documentation and conservation at the international level, to carry out emergency collection of threatened material and to stimulate developing countries' participation through training, the provision of methodologies and the dissemination of relevant information. With the special emphasis on microbial genetic resources, five pilot regional microbiological resources centres (MIRCENs) have been established, where conservation is fully integrated with development of technologies for selected environmental sound deployment of microbial genetic resources.

(b) Objectives

86. The over-all objective of the programme is to ensure the maintenance of the widest genetic diversity within those species of plants, animals and micro-organisms on which humanity depends for survival and well being, to make such genetic material readily accessible for rational utilization and to develop the necessary application technologies for efficient use in environmentally sound development, and - particularly in the case of micro-organisms - for improvement of the environment.

(c) Activities to advance the objectives

Objective 1: Microbial genetic resources

To promote the global indexing of information, and the preparation of catalogues of microbial strains for selected environmental applications.

Strategies:

Continued computerization of information on culture collection accessions at the World Data Centre on micro-organisms (WDC) at the University of Brisbane, Australia, making such information readily accessible and production of specialized catalogues for environmentally-relevant strains.

Elements of the strategy

(i) Computerization of data and use of uniform strain accession forms

(ii) Publication of catalogues of strains for fermented food technologies, and for biological pest and vector control

<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Continuing	UNEP, UNESCO, WDC, WFCC, IAMS, Government of Australia	UNESCO to implement	The extent to which major culture collections adopt the WDC system for information storage and retrieval; culture collections in developing countries interact with WDC; the WDC information system is utilized by users; and specialized catalogues are produced and made use of them.
1982-1983	WDC, FAO, WHO, UNESCO, UNEP	FAO and UNESCO to implement with assistance of WDC and WHO	The extent of international awareness of the need for regulation of accessibility to microbial strains

Objective 2

To promote the development, testing and application of microbial technologies for environmental betterment with emphasis on soil fertility and biofuel production, and the integration of conservation and utilization elements in regional microbiological resources centres (MIRCENS) in developing countries.

Strategies:

Continued functioning of pilot MIRCENS (goal 10 for 1982) and the compilation of information on appropriate microbial technologies and on their applications in environmental management.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Final report on the impact of the pilot MIRCENS on environmental betterment	1982	UNEP, UNESCO	Primarily by UNESCO (report produced)	Continued functioning of nationally supported MIRCENS and their ability to respond to environmental management needs in their regions, as well as the extent to which biological nitrogen fixation and biofuels become significantly utilized in field activities
(ii) Pilot MIRCENS at Nairobi, Bangkok, Cairo, Porto Alegre and Guatemala start to shift to an operational phase with national support: formulation of plans for expanding networks with national and international support in close collaboration with the continuing regional project in bio-technology and applied microbiology for Africa and the Arab States	1982-1983	UNEP, UNESCO, FAO, MIRCENS, Governments	Production of a report	
(iii) Assessment of the experience and output of the pilot MIRCENS as an approach to application of science and technology in environmental management	1983	UNESCO, UNEP, FAO, Governments, NGOs	Primarily by UNESCO	Production of a report
(iv) Continued functioning of a co-ordinating body for promotion of nitrogen fixation research and applied research on biological nitrogen fixation in various eco-agricultural systems	1982-1983	FAO, UNDP, UNEP, UNESCO, MIRCENS, international agricultural research centres, Governments	Primarily by FAO: research centres IARC's to carry out research (see also the Research and assessment programme)	

- (v) Assessment of potential of nitrogen fixation in non-legumes and of micro-organisms in the degradation of recalcitrant pollutants
1982
FAO, UNEP, UNDP, Primarily by FAO
UNESCO, NGOs
- (vi) Assessment of the potential of microbial conversions in waste-free technologies and as a significant source of energy
1983
UNESCO, UNEP, Primarily by UNESCO
UNIDO, FAO, NGOs

Objective 3: Crop plant genetic resources

To survey genetic impoverishment in selected crop plant species and their wild relatives to collect, evaluate, document and promote safe storage or in situ conservation of relevant germplasm in centres of diversity, and to promote access to available genetic material and information there on.

Strategies:

Support for, and participation in, the work of the International Board for Plant Genetic Resources (IBPGR) and development of applicable methodologies for assessment of genetic impoverishment and for in situ conservation.

Elements of strategy

- (i) Exploration/collection of specified germplasms according to the approved priority list - evaluation and storage of collected germplasm, publication of information on stored genetic material and methodologies for in situ conservation

Remarks

FAO, UNDP, UNEP, IBPGR to implement
IBPGR, CGIAR, Governments

Date of action

Continuing

Main actors

Achievement indicator

The extent to which genetic material in primary and secondary centres of diversity receive protection and become accessible to users; and in situ protected areas become sensitive to intra-specific genetic diversity. Number of national conservation plans and gene banks for crop genetic resources established by Governments. (Relevant to all strategy elements)

<u>Elements of strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(ii) Status report on accessibility to stored crop plant genetic resources	1982	FAO, UNEP, IBPGR, Governments		
(iii) Assessment of approaches to integrating stored germplasm evaluation with utilization in environmentally sound agricultural systems	1983	FAO, UNEP, IAEA, IBPGR, ICRAF	IBPGR to co-ordinate	
(iv) Examination of approaches to germplasm conservation of multipurpose plant species	1983	UNEP, UNESCO, FAO, IBPGR, Governments	ICRAF to co-ordinate	

Objective 4: Forest genetic resources

Development and testing of appropriate systems for assessment of genetic impoverishment in woody species and for conservation of threatened genecotypes (provenances).

Strategies:

Survey, indexing and publication of information on genetic impoverishment in woody species for timber, pulp and agro-forestry, and promotion of conservation efforts for threatened populations. Support for research on long-term tree germplasm conservation.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Publication of data on genetic impoverishment in specified woody species and continued functioning of pilot <u>ex situ</u> conservation stands	Continuing	FAO, UNEP, IUFRO, IUCN	Primarily by FAO	Viability of pilot international <u>ex situ</u> conservation stands

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(ii) Conclusion of first phase of project on tree genetic resources for rural living and environmental stabilization in arid areas	1983	UNEP, FAO, IBPGR, CGIAR, Governments	Primarily by FAO	Implementation of an action plan for in situ conservation and sensitization of protected areas to intra-specific genetic impoverishment in woody species
(iii) Investigation of methodologies for surveying and indexing genetic impoverishment within woody species in biosphere reserves and other protected areas and promotion of <u>in situ</u> conservation	1982-1983	UNEP, UNESCO, FAO, IBPGR, IUCN, Governments	UNESCO/FAO to implement	Development of national conservation schemes for tree and shrub genetic resources. (Relevant to all strategy elements)
(iv) Assessment of germplasm conservation of multipurpose tree species	1982-1983	FAO, UNEP, ICRAF	ICRAF to implement	
(v) Promotion of research into genetic impoverishment and long-term storage of tree germplasm	1982-1983	FAO, UNESCO, UNEP, IUFRO, Governments	Primarily by FAO	

Objective 5: Animal genetic resources

Survey, indexing and publication of information on indigenous breeds, and promotion of conservation efforts for such breeds. Support for research on long-term germplasm conservation methodology.

Strategy

To promote national concern for the conservation of indigenous breeds of farm and pastoral animals, and to encourage the generation of knowledge on productivity of lesser known breeds in marginal ecosystems and the development of experimental gene banks.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Publication of information on selected indigenous breeds	Continuing	FAO, UNEP, Governments	FAO to co-ordinate	The extent to which Governments establish national conservation schemes for indigenous animal breeds and integrate selected ones in national livestock policies
(ii) Establishment of research network for the study of trypanotolerant breeds of cattle in Africa, and publication of survey on trypanotolerance	1982-1983	ILCA, CGIAR	ILCA to implement	Publication of survey
(iii) Functioning of the Expert Panel on Animal Genetic Resources, feasibility studies for regional genebanks, development of data banks for Africa and Latin America, and conclusion of survey of indigenous breeds of farm animals in USSR	1982	FAO, UNEP, Government of USSR	Primarily by FAO	
(iv) Investigation of methodologies for survey, indexing and documentation of wild relatives of domestic animals in biosphere reserves and other protected areas	1982-1983	UNESCO, FAO, UNEP, IUCN, Governments	Primarily by UNESCO	
(v) Preparation of reports on the methodology for <u>ex situ</u> long-term storage of animal genetic resources and on the potential of taming and domestication of specified wild species for environmentally-marginal ecosystems, with special reference to Camelidae species in the Andean region	1983	FAO, UNEP, IUCN, Governments	FAO to co-ordinate	Publication of reports

Objective 6: Fish genetic resources

To devise applicable methodologies for assessment and conservation of threatened fish populations, including those related to aquaculture, and to disseminate such information.

Strategy:

Survey, and publication of information on, threatened fish populations and on methodologies for their conservation and pilot conservation of major fish populations threatened by habitat destruction.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Publication of information on threatened fish populations and lists/catalogues of genetic qualities for specified fish species	Continued	FAO, UNESCO, UNEP, IUCN, Governments	FAO to implement	The development and application of a methodology receiving broad endorsement that could be a basis for national conservation schemes
(ii) Continued survey of the distribution of fish populations in biosphere reserves and in specific marine and inland water systems	1982-1983	UNESCO, Governments	Primarily by UNESCO	
(iii) Preparation of a registry of fish introductions	1982-1983	FAO, Governments	Primarily by FAO	
(iv) Methodologies for assessing genetic impoverishment in selected threatened fish populations	1982-1983	FAO, UNESCO, UNEP, IUCN, Governments	Primarily by FAO	

Objective 7: Training

To ensure the existence of expertise capable of servicing genetic resources conservation and environmental application schemes, especially in developing countries.

Strategy

To support specialist training and public awareness through scientific meetings, fellowships, short and long training courses and study tours for personnel from developing countries, and to promote the use of information material generated by the component subprogrammes.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Training course in conservation of crop genetic resources at the University of Birmingham	Annually	UNEP, FAO, IBPGR, United Kingdom Government	IBPGR to implement	The extent to which national and regional conservation schemes will be able to draw upon local expertise, and to which a critical mass of trainees has been formed and been able to catalyse public awareness of the need for genetic resources conservation and deployment in environmentally sound development schemes and in environmental betterment. (Applies to all strategy elements)
(ii) Training course in applied microbiology at the University of Osaka	Annually	UNESCO, Government of Japan	UNESCO to implement	
(iii) Short training courses/fellowships on environmental applications of microorganisms and culture collections, in conjunction with MIRGEN networks	Continuing	UNESCO, FAO, WHO, UNIDO, UNEP, Governments, NGOs	Primarily by UNESCO	
(iv) Short-term training in methodology of forest genetic resources conservation for specialists from developing countries	Continuing	FAO, UNEP, ICRAF, Governments	Primarily by FAO	

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(v) Short-term training in methodology of animal genetic resources conservation for specialists from developing countries	Continuing	FAO, UNEP, Governments	Primarily by FAO	

(d) Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	1,050,000	1,200,000
UNESCO: Regular Programme	180,000	180,000
UNESCO: Extrabudgetary	200,000	200,000

8. Wildlife and Protected Areas
(budget sub-line 1110)

(a) Background

87. The legislative authority for this programme is to be found in recommendations 31, 32, 34-38, 40 and 98-99 of the Stockholm Conference. Since then the Governing Council has identified conservation of nature and wildlife as a priority area, and in a number of decisions - (1 (1), section III; 8 A (II), section I; 29(III); 82(V); 8/6 section IV; and 8/11 - given guidance on the development of this programme. The relevant goal for 1982 calls for the development of a global plan for the conservation of nature and the planning, establishment and management of selected protected areas, and promotion of their links in a global network. The World Conservation Strategy partly implementing the goal summarises UNEP's approach to wild animal and plant conservation - and indeed that of the United Nations agencies concerned, notably FAO, UNESCO, UNDP and the World Bank - which is to ensure sustained availability of resources for human use. This document has been widely circulated to planners and decision-makers throughout the world. The implementation of the strategy is the principal focus in the foreseeable future and will complement the draft World Charter on Nature, of which the General Assembly, by resolution 35/7 of 30 October 1980, took note with interest, requesting the Secretary-General, in co-operation with UNEP and IUCN, to formulate appropriate recommendations with a view to the adoption of a world charter for nature. FAO in partnership with UNDP remains the main source of assistance to Governments in wildlife and national park management. UNESCO continues its work on the development of the international network of biosphere reserves in the framework of MAB. All these international efforts need consistent co-ordination and harmonization. The interagency Ecosystems Conservation Group (ECG), established in 1975, remains valid for this purpose, and special efforts will be made in the coming years to ensure its effective functioning.

(b) Objectives

88. The over-all objective of the programme is to assist Governments in the identification and conservation of areas, species, etc., of value to long-term sustainable development, and thus to promote the implementation of the World Conservation Strategy.

(c) Activities to advance the objectives

Objective 1

To assist Governments in the preparation of national Conservation Strategies.

Strategy:

Support to Governments for the integration of ecological considerations in development activities.

Elements of the strategy

- (i) Co-ordination and programming of selected conservation activities through ECG
- (ii) Further refinement of concepts and principles and promotion of the development and implementation of conservation strategies and plans

Date of action

Annually

Ongoing

Main actors

UNEP, FAO, UNESCO, IUCN

UNEP, IUCN Governments UNESCO, FAO

Achievement indicator

Decision by Governments and international bodies that the World Conservation Strategy and the accompanying source-book provide an appropriate basis for effective integration of ecological considerations in development activities, and initiation of practical action this end (covers both strategy elements)

UNEP to convene meetings

To be implemented mainly by IUCN. Field testing of guidelines is part of process

Objective 2

To assist Governments in the planning, establishment and management of protected areas in the major biogeographical provinces in the world.

Strategy:

Support to Governments in the implementation of conservation programmes in areas where they do not already exist, through studies, exchange of personnel within and between regions, information exchange, updating and storage, and support to networks of protected areas.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Formulation and initial implementation of master plans for selected areas:				
- Gobi	1982-1983	UNEP, Governments of Mongolia and USSR	Mongolia and USSR to implement	Sufficient technical material available to Governments for decisions on establishment of additional protected areas to be linked to a global network
- Latin America	1982-1983	UNEP, FAO, IUCN, Governments, donors	Includes also wild-lands. To be implemented by FAO and Governments	Master plan for the Gobi National Park
- Biosphere reserves in arid and semi-arid lands	1982-1983	UNEP, UNESCO, Governments, donors	UNESCO and Governments to implement; part of MAB activity	Technical reports and advice available to Governments on request
- Other regions	Ongoing	UNEP, IUCN, Governments, UNESCO, FAO		Technical reports and advice to Governments on request
(ii) Preparation and holding of international conferences on national parks and other protected areas:				
				Technical reports and advice to Governments on request. By 1983 there will be about 250 biosphere reserves in some 60 countries

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
- World Conference on National Parks (Indonesia, 1982)	Ongoing	UNEP, IUCN, Government of Indonesia, FAO, UNESCO	Preparations underway. To be implemented mainly by IUCN and the Government of Indonesia	Publication of proceedings of the Conference
- International Conference on Biosphere Reserves (Minsk, USSR, 1983)	Ongoing	UNEP, UNESCO, FAO, IUCN, USSR Government	Preparations under way. To be implemented mainly by UNESCO and the USSR Government	Publication of proceedings of the Conference
(iii) Continued preparation and publication of directories of protected areas and <u>Parks Magazine</u>	Ongoing	UNEP, IUCN; <u>Parks Magazine Consortium</u> (UNEP, FAO, UNESCO, OAS, IUCN, WWF, Parks Canada, United States National Park Service)	Preparation of Directories started in 1975. Mainly IUCN to implement. <u>Parks Magazine</u> started in 1979	Publication of: United Nations List of National Parks and Equivalent Reserves; World Directory of National Parks and other Protected areas; four issues of <u>Parks Magazine</u> each year containing articles on terrestrial, freshwater, coastal and marine protected areas
(iv) Conservation of wetland resources	1982-1983	UNEP Governments, FAO, UNESCO, IWRB, IUCN, INTECOL	Follow-up to the meeting held at Cagliari, Italy in 1980	

Objective 3

To assist Governments in the preparation of a comprehensive methodology for reviewing the status of wild species of fauna and flora with a view to identifying areas or species which require conservation or are likely to be adversely affected as a result of human intervention.

Strategy:

Support for the documentation of the status of species throughout the world in order to prepare the data required to identify conservation needs.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Preparation and publication of directories of threatened animals and plants	Ongoing	UNEP, IUCN	Started in 1975. To be implemented mainly by IUCN	Decision by Governments that sufficient technical material is available on basis of which further action can be taken with regard to effective conservation of wild animals and plants
(ii) Preparation and updating of action plans for threatened animals and plants and assistance to Governments in their implementation	Ongoing	UNEP, IUCN, Governments	Started in 1979. To be implemented mainly by IUCN	Completion of action plans for 13 species groups
(iii) Reviews and evaluation of the efficacy of conservation programmes and treaties	1982-1983	UNEP, FAO, IUCN	Reviews and evaluation mainly by FAO to be implemented; IUCN to prepare position papers and statements	Issuing of position papers and statements on priority subjects

Objective 4

To assist Governments in the implementation of effective regional and international measures for conservation of wild animals and plants and their habitats and the implementation of these measures by national legislation and administration.

Strategy:

Catalytic support to the secretariats of the major wildlife conventions

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Implementation of Convention on International Trade in Endangered Species of Wild Fauna and Flora and strengthening of measures related thereto:	Ongoing	UNEP, Convention secretariat, IUCN, Governments	To be implemented - mainly by Convention secretariat and Governments. Started in 1979	Additional adhering to conservation conventions by Governments
- Identification manual for endangered species	1982-1983	UNEP, Convention secretariat, Governments	To be implemented mainly by Convention secretariat and Governments	Publication of identification manual for endangered species
- Checklist of endangered species	1982-1983	UNEP, Convention secretariat, Governments	To be implemented mainly by Convention secretariat and Governments	Publication of checklist of endangered species
(ii) Preparation, convening and follow-up to the First Meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals	1982-1983	UNEP, Governments	Meeting to be convened by UNEP upon entry into force of Convention	

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iii) Assistance to Governments in the development and implementation of other conservation conventions on wild animals and plants and habitats	Annually			
- <u>2/</u> see below		see below <u>2/</u>		
- Development of a regional Convention for Nature Conservation in South East Asia and assistance to Governments in its implementation	1982-1983	UNEP, FAO, Governments	To be implemented mainly by FAO and ASEAN countries	

Objective 5

To assist Governments in training, information, extension and public participation with respect to conservation in Africa, Asia-Pacific and Latin America.

Strategy:

Support to Governments in training activities in conservation for the benefit of developing countries. Assistance to Governments in exchange programmes for conservation specialists to enable them share expertise and experience, and in extension and public information.

2/ Convention on Nature Conservation in the South Pacific (Governments/UNEP/FAO/UNESCO/IUCN/SPC), Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (Governments/UNEP/FAO/UNESCO/OAS/IUCN), African Convention on the Conservation of Nature and Natural Resources (Governments/UNEP/FAO/UNESCO/OAU/IUCN), Convention concerning the Protection of the World Cultural and Natural Heritage (Governments/UNESCO/UNEP/FAO/IUCN), Convention on the Conservation of Wildlife and Natural Habitats (Governments/UNEP/FAO/UNESCO/Council of Europe/IUCN), International Plant Protection Convention (Governments/FAO/UNEP/UNESCO/IUCN), Plant Protection Agreement for Southeast Asia and Pacific Region (Governments/FAO/UNEP/UNESCO/IUCN), Convention on Conservation of Wetlands of International Importance especially as Waterfowl Habitat (Governments/UNESCO/IUCN/UNEP/FAO).

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Conservation training programmes in Africa, Asia-Pacific and Latin America	1982-1983	Governments, UNEP, UNDP, FAO, UNESCO	Mainly FAO and Governments	Establishment by Governments of training, education and information conservation programmes in Africa, Asia-Pacific and Latin American regions.
(ii) Study tours on protected areas and wildlife in the USSR and China	Annually	CHINA, USSR, UNEP, UNESCO, FAO, CMEA	The USSR study tour is an ongoing programme, implemented mainly by UNESCO and the USSR Government. The China study tour will start in 1982, mainly implemented by UNESCO and Government of China	Decision by Governments that sufficient technical material is available and that discussions on the expert level have reached a stage when further action can be taken with regard to planning and establishment of additional protected areas to be linked to a global network of such areas. By 1983 there will be about 250 biosphere reserves in some 60 countries
(iii) Conservation information programmes in Africa (Elephant Paper/ Nature et Faune); Asia-Pacific (Tiger Paper); Latin America (Puma Paper)	1982-1983	UNEP, FAO, Governments	To be implemented mainly by FAO	Publication of four issues of each information bulletin each year

(d) Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	1,850,000	2,400,000
UNESCO Regular Programme	160,000	160,000
UNESCO Extrabudgetary	500,000	500,000

D. ENVIRONMENT AND DEVELOPMENT
(budget line C4)

1. Introduction

89. The subject area of environment and development has been treated in UNEP as an integrative category which covers a wide spectrum of topics and concerns, ranging from the consideration of the "quality of life" and conceptual issues relating to the environment/development relationship to the development of methodologies for sound environmental management. For programmatic purposes environment and development has been subdivided into three programmes: integrated approach to environment and development, including ecodevelopment and use of natural resources, environmentally sound and appropriate technology; and industry and environment. These three programmes, particularly the first, include several activities that are integral to environmental management.

2. Integrated approach to environment and development
and environmental management
(budget sub-lines 0404 and 1001)

(a) Background

90. The question of an integrated approach to environment and development was initially examined in UNEP in order to explore the conceptual bases on which the understanding of the environment/development relationship rests. For development to be long-term and sustainable, it has to be based on the concepts and precepts of sound environmental management. Rational choices for society, in its efforts to meet development needs, must stem from a reconciliation of economic policies and considerations with environmental and social concerns and objectives, since the conversion of natural resources into productive assets to ensure growth objectives and the enhancement of the quality of life cannot be sustained unless it is predicated on a sustained resource base.

91. Although for many developing countries remedial approaches to environmental problems (poor water supplies, inadequate housing and sanitation, low nutritional standards and dangers to health, etc.) are closely interwoven with policies for over-all development, the problems that arise from the process of development itself increase rapidly, and in their complexity, when that process gathers momentum. In the realization of many development objectives, environmental and social goals can be incorporated and adverse environmental impacts avoided without undue difficulty, and in individual cases, such incorporation or avoidance may, in fact, support or reinforce economic growth. The situation, however, becomes complicated when conflicts are perceived, particularly in the short or medium term, and difficult choices become necessary regarding trade-offs between incorporation (and/or avoidance) and narrower growth objectives.

92. In order to allow for rational environmental management, what is needed is the development of an accounting method that will reflect more fully and adequately the full social and environmental, as well as economic, impacts of development and growth-related activities. The development of such a methodology is not easy, because environmental goals and constraints are by definition long-term and general in nature, while economic policies and planning are largely short-term

and specific. When such methodologies and analytical tools have been prepared and tested, the reconciliation of economic and environmental objectives will become more tractable. Until then, it is necessary to proceed with caution.

93. The activities in the programme area described in this document represent further development of work under the legislative authority of Stockholm Conference recommendations 102-107, in line with the programme as stated in document A/33/6/Rev.1,^{3/} paragraphs 14.79-14.84, and as supplemented by Governing Council decisions 7/3, annex; 7/7; 8/1, sections I and II; and 8/12. The goals for 1982 relevant to the subject area are numbers 11 and 12:

(a) Provision of guidelines, methodologies and advice for use by Governments and international organizations on the proper integration of environmental concerns into development planning processes and in environmental management;

(b) Advice on strategies of development and lifestyles which are environmentally-prudent and entail rational and non-wasteful use of natural resources.

Although both these goals are of a continuing nature, progress has been made in providing, and promoting guidelines for environmental management and diagnosis, and at the regional level, in promoting alternative patterns of development and lifestyles.

(b) Objective

94. The general objective of the programme area is to clarify the environment/development relationship further, develop methodologies for sound environmental management, and promote international co-operation for integrating environmental considerations in the development process.

^{3/} Official Records of the General Assembly, Thirty-third session, Supplement No. 6.

(c) Activities to advance the objectives of the Programme.

Objective 1

To develop and promote the practical application of methodologies and techniques for the application of cost-benefit analysis to environmental protection measures.

Strategy:

Mobilization and collation of pertinent research, practical experience and findings, launching of new research, review of findings by expert and inter-governmental groups, as appropriate, and dissemination of publications and reports.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Intergovernmental expert group meetings on cost-benefit analysis	Ongoing	Governments, UNEP	Ongoing activity since 1979	Promotion of the practical application of cost-benefit analysis to environmental protection measures
(ii) Classification and categorization of case studies undertaken by Governments, research institutions, universities and non-governmental organizations on the evaluation of costs and benefits of environmental protection measures with a view to identifying sensible practices and procedures and developing readily usable methodological framework for such evaluation.	Ongoing	Governments, UNEP	Ongoing activity since 1981	Publications
(iii) Application of cost and benefit evaluation methodologies to selected large-scale development activities, e.g. deforestation, desertification, large river basin developments, desalination	1981-1983	USDA, FAO, UNEP	Activity begins in 1981	Concrete methodologies for practical application in different sectors of development activities

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iv) Examination in the regional framework of the application of techniques of cost-benefit evaluation to selected environmental problems: desalination in West Asia, water basin development in Asia and the Pacific, control of desertification in Africa and control of tropical deforestation in Latin America	1982-1983	ECA, ECLA, ECWA ESCAP, UNEP	Activity begins in 1981	Promotion of the use of cost-benefit analysis at the regional level
(v) Preparation of manual on the application of cost-benefit analysis to development projects	1982-1983	East-West Centre, Hawaii, UNEP	Activity begins in 1981	Practical application of cost-benefit analysis to development problems

Objective 2

To facilitate the applications of an integrated approach to environment and development in development assistance policies and programmes.

Strategy:

Preparation of sectoral operational guidelines on environmental parameters and constraints in development activities, and review of the practices of development financing institutions with regard to the incorporation of environmental considerations in development projects, programme and policies.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Preparation of non-technical operational guidelines for different development sectors to identify environmental parameters and constraints	Ongoing	UNDP, UNEP	Continuing activity	Publications

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(II) Review, through annual meetings of the Committee of International Development Financing Institutions on the Environment, of the incorporation of environmental considerations in funded projects	Ongoing	UNEP, UNDP, World Bank, Organization of American States, African Development Bank, Arab Bank for African Development, Asian Development Bank, Caribbean Development Bank, European Development Fund (EEC) Inter-American Development Bank	Continuing activity	Sound environmental considerations included in funded projects
(III) Extension of the application of the Declaration of Principles to other multilateral financing institutions and to bilateral aid agencies	Ongoing	UNEP, ILED, bilateral aid agencies, OPEC Funds, KFAED	Continuing activity	Sound environmental considerations included in funded projects

Objective 3

To provide methodological guidance to developing countries on the preparation of environmental impact assessments of development activities.

Strategy

Development of a cost-effective and simplified format for the preparation of environmental impact assessment statements under conditions of rapid economic development.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Support for a pilot experiment on the application of available knowledge on cost-effective environmental impact assessment techniques in a situation of rural industrialization	1982-1983	UNEP and research institutions	Follow-up of programme work on developing countries needs	Publications, workshop
(ii) Case study of environmental impact assessment of transboundary pollution	1982-1983	UNEP, Governments		Publication of workshop report

Objective 4

To prepare case study analyses and guidelines on integrated physical, socio-economic and environmental planning.

Strategy:

Studies, expert workshops and reports on viable approaches to integrated physical planning, including land-use planning for environmentally sound development in selected ecological situations.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Studies and workshops on various aspects of integrated physical planning	1982-1983	UNEP, SEDES, Governments of Japan and the USSR	Activity starts 1981	Publications, workshops, reports
(ii) Environmental management aspects of development planning in the humid tropics: human settlements in the Central Sierra of Peru	1982-1983	Government of Peru, OAS, UNEP	Activity starts 1981	Workshop, reports

Objective 5

To promote exchange of experience on the design and implementation of plans for environmental improvement and economic development at the community level.

Strategy

Compilation, analysis and dissemination of information to policy-makers and planners on concrete approaches to integrated environmental and developmental planning at the community level.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(1) Analytical case study reviews of proven integrated approaches to environmental improvement and economic development at the community level	1982-1983	UNEP		Publications

Objective 6

To generate and disseminate methodological guidance on the accounting and appraisal of conservation and use of natural resources in relation to economic planning at national and sub-national levels.

Strategy

Preparation of methodological guidance on macro-economic analyses of conservation and use of natural resources in relation to development planning, and support to national and regional environmental accounting as related to surveys of development and formulation of development strategies.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(1) Preparation of an anthology of scientific papers on the methodology of macro-economic approaches to the accounting and analysis of conservation and use of natural resources in relation to economic planning	Ongoing	USSR Academy of Sciences, UNEP	Activity begins in 1981	Publications

Elements of the strategy

(ii) Development of and support for pilot experiments in preparing, with a multi-disciplinary approach, inventories, reviews and of environmental problems and prospects and their integration in the formulation of development strategies and plans

Date of action 1982-1983

Main actors Government of the Netherlands, UNEP

Remarks Follow-up of UNEP/ Government of Kenya project

Achievement indicator Report; Consultation with Governments

(iii) Development of and support for pilot experiments in regional accounting of environmental trends and their assessment in relation to development trends and prospects

Date of action 1982-1983

Main actors ECWA, ESCAP, ECA, ECLA, UNEP

Achievement indicator Promotion of objective at regional level

Objective 7

To analyse and bring to the attention of Governments and international organizations the importance of environmental considerations in international economic co-operation for development.

Strategy:

Continued research and discussion in relevant international forums and the building up of awareness at the policy level for incorporation of environmental considerations in international economic trade and financial co-operation.

Elements of the strategy

Continuation of studies and dissemination of their results:

Date of action 1982-1983

Main actors UNCTC, UNCTAD, UNEP, UNIDO and GATT

Remarks Preliminary studies undertaken since 1977

Achievement indicator Publications, Guidance for international economic co-operation

(i) the influence of environmental factors on tariffs and liberalization of trade

(ii) the influence of national and regional environmental policies on the redeployment of industrial capacity

Objective 8

Further development of basic principles relating to the integrated approach to environment and development.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Participation in the co-ordinated programme of studies of the United Nations on the inter-relationships among people, resources, environment and development (separately funded)	Ongoing	United Nations, UNEP and others		Publications, policy guidance

(d) Budgetary implications

	<u>1982</u> \$US	<u>1983</u> \$US
UNEP (budget sub-line 0404)	1,000,000	1,400,000
(budget sub-line 1001)	650,000	850,000
UNESCO Regular Programme	40,000	40,000
UNESCO Extrabudgetary	200,000	200,000

3. Environmentally-Sound and Appropriate Technology
(budget sub-line 0402)

(a) Background

95. The importance of appropriate technology in terms of its design and application to specific programmes, for example in the fields of water, industry and energy, is crucial to a society which has come to rely increasingly on science and technology to meet everexpanding and complex needs. Indeed, the concept of appropriate technology found expression in several of the recommendations of the Stockholm Conference, for example, Recommendations 22, 26, 45 and 53. The importance of environmentally sound and appropriate technologies stems from their role in harmonizing efforts to satisfy basic needs with the nature and constraints of the immediate environment. Technology is a critical element in determining man's impact - whether positive or negative - on the environment.

96. The in-depth review of this subject (UNEP Report No. 3 (1979) revealed that most members of the United Nations family deal with aspects of appropriate technology although the nature of concern, i.e. whether related to conceptualization or practical activities and methodologies, differ from the one body to another. This is not surprising, since the review notes that "the very concept of appropriateness implies a value judgement, and, therefore, inevitably reflects a given set of ideas and assumptions about development and the benefits and drawbacks of actions oriented to development". UNEP's orientation is summed up in goal 13 for 1982, which is cited in full in relation to the programme on environmental aspects of human settlements planning (see para. 47 above). Among the decisions of the Governing Council that have helped shape this approach are: 1 (I), section III; 8 (II); 29 (III); 82 (V); 7/3; and 8/6, section IV.

(b) Objective

97. The over-all objective of the programme is to promote the development and application of environmentally sound technologies appropriate to different social and economic constraints and conditions in the fields of industry, agriculture, energy, transport, mining, human settlements and other areas of human activities.

(c) Activities to advance the objectives

The strategies below relate to all the objectives, and are therefore stated at the outset:

- (i) Technological choice:
To develop environmentally sound criteria to assess and select environmentally sound and appropriate technology.
- (ii) Research and development:
To promote development of environmentally sound and appropriate technology and accessibility to such technology.
- (iii) Transfer of technology:
To promote the establishment of mechanisms to facilitate an international transfer of technology.
- (iv) Establishment of institutional network:
To promote the establishment of a network of technology institutions to carry forward the programme at the regional and national levels.

Objective 1

To promote traditional technologies as a basis for developing self-reliance and self-sustenance.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(1) Studies on indigenous technologies and, where appropriate, resuscitation of techniques and technologies through pilot demonstration projects on tropical root-crop production and post-harvest storage	1982-1983	UNEP, FAO	To be initiated in 1981. Relevant to work on agro-industries	Publication of overview on traditional technologies; implementation of demonstration projects

<p><u>Elements of the strategy</u></p> <p>(ii) Pilot projects on farm tools and equipment technology in selected least developed and semi-arid countries of Africa</p>	<p><u>Date of action</u></p> <p>1982-1983</p>	<p><u>Main actors</u></p> <p>ILO, FAO, UNIDO</p>	<p><u>Remarks</u></p> <p>Ongoing since 1980 Level Two activity. Related to Arid and semi-arid lands, including desertification</p>	<p><u>Achievement indicator</u></p> <p>Completion of pilot projects; publication of manuals</p>
<p><u>Objective 2</u></p> <p>To identify and promote low-waste and non-waste technologies.</p>	<p><u>Date of action</u></p> <p>1982-1983</p>	<p><u>Main actors</u></p> <p>UNEP, ECE, Government of the USSR</p>	<p><u>Remarks</u></p> <p>Ongoing since 1980. Relevant to activities under Industry and environment</p>	<p><u>Achievement indicator</u></p> <p>Availability of case studies, particularly in the ECE region</p>
<p><u>Objective 3</u></p> <p>To promote environmentally sound technologies for development in special areas and in areas considered to constitute fragile ecosystems.</p>	<p><u>Date of action</u></p> <p>1982-1983</p>	<p><u>Main actors</u></p> <p>UND/DTCO, UNEP, FAO, UNESCO, SIDA</p>	<p><u>Remarks</u></p> <p>To start in 1981. Relevant to Water, Soils and Arid and Semi-arid lands including desertification</p>	<p><u>Achievement Indicator</u></p> <p>Completion of three demonstration projects and publication of manuals on management methodologies</p>
<p><u>Elements of the strategy</u></p> <p>(i) Development of methodologies for management of biomass in arid and semi-arid regions, and their dissemination through seminars and training courses</p> <p>(ii) Support for pilot demonstration projects in regard to specific technologies</p> <p>(iii) Design and demonstration of rural water schemes</p>	<p><u>Date of action</u></p> <p>1982-1983</p>	<p><u>Main actors</u></p> <p>UNEP, ECE, Government of the USSR</p>	<p><u>Remarks</u></p> <p>Ongoing since 1980. Relevant to activities under Industry and environment</p>	<p><u>Achievement indicator</u></p> <p>Availability of case studies, particularly in the ECE region</p>

Objective 4 To establish methodologies for selection, assessment and transfer of environmentally sound technologies.

<u>Elements of strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
Review of methodologies, testing of them in the context of development activities, and preparation of manuals	1982-1983	UN/DICD, UNEP, UNESCO	To start in 1981. Relevant to Environmental aspects of human settlements planning	Publication of manuals

Objective 5

To articulate the potential of new techniques and technologies (i.e. Biotechnology and Microbiological techniques and to promote those with major environmental impact).

Elements of the strategy

- (i) Undertake studies to establish potential of new technologies and techniques in the utilization of water hyacinth, support for selected pilot demonstration projects through promotion of establishment of network of institutions, and publication of their results in the form of manuals for training

Objective 6

To strengthen national capacities for generating and disseminating technological information to promote the adoption of technologies appropriate to local conditions.

<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
1982-1983	UNEP, UNIDO, UNESCO	To start in 1981. Relevant to Genetic resources (objective 2)	Publication of reports, completion of demonstration projects and establishment of network of institution

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
Preparation of technical memoranda for small-scale producers and public planners in developing countries to help identify technologies most suited to local conditions	1982-1983	ILO, FAO	Ongoing since 1978. Related to Human settlements activities at Level Two	Publishing fifteen memoranda by the end of 1983
(d) <u>Budgetary implications</u>				
			1982 \$US	1983 \$US
UNEP			300,000	400,000
UNESCO Regular Programme			150,000	150,000
ILO, FAO, UNIDO Level Two activities			131,448	216,128

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

(a) Background

98. Industrialization which promotes economic growth and enhances human welfare is the corner-stone of development strategies in many countries. Although this was not expressly stated in the Stockholm Action Plan, the spirit of the recommendations implied it. ^{4/} It is now widely recognized that in order to achieve accelerated and sustainable development, the industrialization process must incorporate environmental safeguards. Sound environmental management of all industrial activities, and through the joint efforts of governmental authorities and industry, including workers' organizations, is thus called for. In the Lima Declaration (1975) and the New Delhi Declaration and Plan of Action (1980) Governments have emphasized the importance of industrial development and outlined the requirements of what needs to be done in the coming decades. Similarly the Governing Council, in decisions I (1), section III; 8 (11); 57 (IV); 82 (V); 7/3 and 8/6, section IV, has provided guidance for the development of a programme of activities which presently focuses on the following industrial sectors: agro-industries, chemicals, iron and steel, the motor vehicle and its use, non-ferrous metals, petroleum, and pulp and paper. A preliminary review of the cement industry is also under way. As indicated in section (c) below, activities relating to the maintenance of pollution control equipment. The programme generates guidelines on industrial environmental impact assessment and on environmental criteria for the siting of industry. An important component of the programme has been the establishment and operation of a computerized environmental industrial information storage and retrieval system.

99. While Governments and industry play key roles in assessing, controlling and minimizing adverse environmental effects of industrial activities and in stimulating effective and rational use of resources in relation to industry, other United Nations bodies such as the United Nations Department of International Economic and Social Affairs, the regional commissions, UNIDO, ILO, FAO, WHO, the World Bank Group, IMCO and UNESCO, have important contributions to make and are fully associated with the programme, providing inputs to activities inter alia by participating in meetings, preparing review documents in their fields of competence, and commenting on material submitted by UNEP. Section (c) below includes, for reasons of space, only a few examples of the many Level Two activities, without UNEP financial support, being conducted by other members of the United Nations system on issues relating to industry and environment.

100. Goal 14 for 1982 calls for the provision of guidelines and advice for use by Governments and industries in reducing the adverse environmental impact of certain practices in specific industries, including advice on industrial location. The implementation of this goal is expected to be on schedule.

(b) Objective

101. The over-all objective of the programme is 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

^{4/} For recommendations on control and recycling of agroindustrial waste and mining aspects, see numbers 22 (a) and 56 respectively.

sectors of industry and in integrating environmental considerations into the planning, siting, construction and operation of industry, including the improvement of the working environment, and to stimulate effective and rational use of resources, renewable as well as non-renewable, human and material, in the manufacture and distribution of industry-based goods and services.

- (c) Activities to advance the objectives
(since the strategy relates to
objectives 1 and 2, it is
stated at the outset)

Strategy
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 environmental problems and proposing specific solutions including the preparation of guidelines, manuals, technical publication and reports.

Objective 1
To prepare and publish guidelines, manuals and reports on studies in various industrial sectors.

Elements of the strategy

Agro-industries

- (i) Preparation of guidelines on the environmental aspects of food loss prevention in perishable crops
- (ii) Workshop on environmental management of distillery waste
- (iii) Preparation of guidelines on management of distillery waste

	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
	1982-1983	UNEP, FAO	Process started in 1981	Publication in 1982. Continuing activities by FAO in 1983
	1982	CIREC, UNEP Brazilian Government, FAO		Publication of report in 1982
	1982-1983	UNEP, FAO	In consultation with Governments and with other organizations	Publication in 1983
<u>Coal industry</u>	1982-1983	World Bank	Continuing from 1981, also relevant to activities under Energy	Publication of guidelines in 1982-1983
(i) Development of guidelines for environmental management in relation to coal mining, coal use and coal gasification				

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
<u>Construction industry</u>				
Preparation of an overview and technical booklet on the environmental aspects of the cement industry	1982-1983	UNEP	In consultation with agencies, Governments and industries	Publication in 1982
<u>Chemical industries</u>				
(i) Preparation of a manual on environmental management in the chemical industries	1982	UNEP, USEPA	Work initiated in 1980	Publication in 1982
(ii) Preparation of guidelines on transboundary transport and disposal of chemical wastes	1982	UNEP	See also GC VIII dec. 8/8 Inputs from WHO/UNIDO Activity initiated in 1980 (Cross ref. IRPTC)	Publication in 1982
(iii) Development of guidelines for the control of emissions from the inorganic chemical industry	1982-1983	ECE, WHO	Activity initiated in 1980	Publication in 1983
(iv) Review of progress by the environmental consultative committee for the chemical industries	1983	UNEP, UNIDO, ILO, WHO, regional commissions		
<u>Iron and steel industry</u>				
(i) Progress Review of progress by the environmental consultative committee for the iron and steel industry	1982	UNEP, UNIDO, ILO, WHO, regional commissions		
(ii) Preparation of environmental management guidelines for the iron and steel industry	1982-1983	UNEP		Publication in 1983

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iii) Publication of report of workshop on environmental aspects of the direct reduction route to steel-making, including mini-steel mills	1982	UNEP, UNIDO	Workshop planned for late 1981 or early 1982	Publication of report
<u>Motor vehicles</u>				
(i) Progress review by the environmental consultative committee on the motor vehicle and its use	1982-1983	UNEP, UNIDO, ILO, WHO, regional commissions		
(ii) Development of guidelines and regulations on the motor vehicle in relation to: emissions and noise control, road safety, and fuel economy:	1982-1983	ECE, UNEP	Catalytic input from UNEP. Ongoing from 1980	Adoption of appropriate regulations
1. Adoption of amendments O4 to Regulation No. 15 on air pollutant emissions from spark ignition engines;	1982			
2. Adoption of amendments to regulations concerning noise from motor vehicles, including changes in measurement method	1982			
3. Adoption of new road safety regulations	1982			
(iii) Development of road safety and accident prevention programmes, particularly in developing countries	1982-1983	WHO	Ongoing from 1980	
<u>Non-ferrous metals</u>				
<u>Aluminium</u>				
(i) Follow-up of the Workshop on Environmental Aspects of Alumina Production (from both bauxitic and non-bauxitic ores)	1982	UNEP, UNIDO	Publication of the proceedings of the Workshop in 1981/1982	

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(ii) Preparation of environmental management guidelines for aluminium smelting	1982-1983	UNEP	Preparatory activities initiated in 1981. Guidelines to be reviewed by a Consultative Committee	Publication in 1982-1983
(iii) Preparation of environmental management guidelines for alumina production	1982-1983	UNEP	Guidelines to be reviewed by a Consultative Committee	Publication in 1983
(iv) Progress review by the environmental consultative committee for the aluminium industry	1982-1983	UNEP, UNIDO, ILO, WHO, regional commissions		
<u>Pb/Zn/Cd, Cu/Ni</u>				
(i) Follow-up of the Workshop on environmental aspects of selected non-ferrous metals (ph/Zn/Cd, Cu/Ni)	1982-1983	UNEP, DTCD	Workshop held in 1981; Environmental health review for workshop prepared by WHO	Publication of report in 1982
(ii) Preparation and publication of overview booklets on the environmental aspects of ph/Zn/Cd and Cu/Ni industries	1982-1983	UNEP, DTCD	Preparation started in 1981	Publication in 1983
(iii) Preparation of environmental management guidelines for the ph/Zn/Cd industries	1982-1983	UNEP, DTCD	To be reviewed by consultative committee in 1983	Publication in 1983-1984
(iv) Preparation of environmental management guidelines for the Cu/Ni industries	1982-1983	UNEP, DTCD	To be reviewed by consultative committee in 1983	Publication in 1983-1984
(v) Progress review by the environmental consultative committee for selected non-ferrous metals industries	1983	UNEP, UNIDO, WHO, ILO, Regional Commissions		

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
<u>Petroleum (also relevant to the Energy and Ocean programmes)</u>				
(i) Preparation of guidelines on application and environmental effects of oil spill chemicals	1982	UNEP, IMCO	Preparation to start in 1981; to be reviewed by consultative committee	Publication in 1982
(ii) Preparation of guidelines on environmental management of refineries and terminals	1982	UNEP, IPIECA	Preparations continued from 1981; to be reviewed by consultative committee	Publication in 1982
(iii) Preparation of guidelines on sulphur emission reduction strategies with special reference to developing countries	1982-1983	UNEP, United Nations, regional commissions	Preparation to start in 1981; to be reviewed by consultative committee	Publication in 1983
<u>Pulp and paper</u>				
(i) Fourth meeting of Environmental Consultative Committee on the Pulp and Paper Industry	1982	UNEP, UNIDO, FAO, ILO, WHO, Environment Canada	Work on these initiated in 1981; to be reviewed by consultative committee	Completion of studies by 1983
(ii) Publication of guidelines on environmental parameters, sampling and analytical methods in the industry	1982	UNEP		
(iii) Pilot studies on desilication of bamboo black liquor	1982-1983	UNIDO, SIDA	Initiated in 1981	Completion of studies by 1983
(iv) Development programmes for small-scale pulp and paper industries	Annually	FAO, bilateral aid	Ongoing from 1980	Report of programme in 198

Objective 2

To encourage the development and implementation of resource conservation policies in relation to specific sectors of industry.

Elements of the strategy

Achievement indicator

Remarks

Main actors

Date of action

Agro-Industries

(i) Regional workshops on agro-industrial residue utilization:

- Latin American region

- African region

(ii) Up-dating of compendium, directory of research institutions and bibliography on agro-industrial residues utilization

(iii) Examination of environmental problems relating to agricultural mechanization

(iv) Study on pollution problems in agriculture

UNEP, FAO, ECLA, CIFCA

UNEP, FAO, ECA

FAO

Initiated in 1981

Ongoing since 1980

Ongoing

Publication of revised compendium directory and bibliography

Reports published in 1981-1985

Publication of report

Chemicals

(i) Development of reports on the recovery and processing of phospho-gypsum wastes from phosphoric acid production

(ii) Study of the influence of environmental protection measures on the development of pesticide production and consumption

(iii) Study on the use of chemical treatment for reducing atmospheric pollution by sulphur oxides and gaseous pollutants in general

Publication in 1983

Report to be published in 1984

Report to be published in 1985

UNIDO

ECE

ECE

1983

1982-1984

1983-1985

Ongoing since 1980

Report to be published in 1985

Achievement Indicator

Remarks

Main actors

Date of action

Elements of the strategy

Coal

(1) Study of environmental problems resulting from coal-mining and ancillary activities in the ECE region

Forest Industries

(1) Study of the conservation of forest resource through the improved utilization of forest products and the reduction of waste

Housing, building and planning

(1) Publication of a report on the study of environmental problems arising from construction activities

Iron and steel industry

(1) Study on protection against air and water pollution arising in the iron and steel industry

Transport including Motor Vehicle and its Use

(1) Reduction of pollution and noise in transport

(ii) Study of increased economy and efficiency in energy consumption in transport

(iii) Elaboration of recommendations on prevention of water pollution and control of noise caused by inland navigation vessels

Report published in 1983

Report to be published in 1983

Publication in 1983

Published in 1984

Publication of recommendations and draft regulations in 1981-1985

Publication in 1983-1984

Publication in 1983-1985

Ongoing

Ongoing

Ongoing since 1980

Ongoing

ECE

ECE

ECE

ECE

ECE

ECE

ECE

1982-1983

1982-1983

1982-1983

1982-1984

1982 onwards

1982-1984

1982 onwards

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
<u>Industrial low-waste and non-waste technologies</u>				
(i) Publication and dissemination of a compendium on this subject	1982 onwards	ECE, UNEP	Ongoing since 1980. Also relevant to appropriate technology	Publication and dissemination in 1981-1985
(ii) Development of methodologies for the comparison and evaluation of low- and non-waste technologies, preparation of reports on incentives for their application and on exchange of waste among countries	1982 onwards	ECE	Ongoing since 1980	Publications in 1982-1985
(iii) Preparation of annual reports on current activities of international organizations in the field of control of toxic wastes	Annually	ECE, organizations		Annual reports
<u>Intersectoral activities</u>				
(i) Publication of reports on study of techniques and means for industrial and municipal sewage effluent purification, and on use of treated domestic sewage	1982-1984	ECE		Publication of reports in 1983 and 1984
(ii) Study of factors influencing the reduction of pollution substances discharged by different industrial branches	1982-1984	ECE, DTCD		Report published in 1984

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(iii) Study of water recycling in industrial processes	1983 onwards	ECE		Report to be published in 1985
(iv) Report on water resources management in industrial areas	1982	DTCD, UNEP	Ongoing since 1981	Convening of an international symposium; publication of a report
<u>Objective 3: Supporting measures</u>				
<u>Strategy</u>				
To undertake training courses, programmes, seminars and workshops on different aspects of industry; to disseminate and promote the exchange of industrial environmental information through the operation of a computerized storage and retrieval system.				
<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
<u>Training: Motor vehicle and its use</u>				
(i) Multi-regional training workshops on planning for the control of emissions from motor vehicles:		WHO, UNEP		Numbers of people trained
- in African region	1982			
- in ECLA region	1982-1983			
(ii) Training workshops on use of the ILO learning material for motor vehicle mechanics	1982-1983	ILO, UNEP, UNIDO, regional commissions	Preparatory work on learning materials in 1981	
<u>Pulp and paper</u>				
Regional training workshops (ESCAP/ECLA/ECA/ECWA regions) on environmental management in pulp and paper industry	1982	UNEP, FAO, SIDA, United Nations Regional Commissions		

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
<u>Siting of industry</u>				
(i) Workshop on testing and applying UNEP guidelines on methodologies industrial environmental criteria for the siting of industry	1982	UNEP, ECWA	Guidelines published in 1980 (English) and 1981 (French)	
<u>Other training activities</u>				
(i) Fellowship training scheme for environmental management in industry	Annually	UNEP, UNIDO, Industry		Awarding of fellowships
(ii) International post-graduate training courses in Hungary on low-waste technology	1982-1985	ECE		Holding of first courses in 1982
(iii) Seminar in USSR on low-waste technology	1982-1985	ECE	Ongoing since 1980	Holding of seminar in 1982-1983
(iv) Integration of an environmental component into ILO enterprise management development programme	1982-1983	ILO, UNEP	Cross ref. 0306 (training)	Report in 1983
(v) Review of toxicological problems associated with specific industries/technologies, aluminium, petrochemicals and dye stuffs	1982-1983	WHO, UNDP	Started in 1980	Report in 1983
(vi) Training course on occupational hygiene. 5/	1982	WHO		

5/ - Also relevant to improvement of working conditions and the working environment.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(vii) Training course for factory Inspectors on working environment. 5/	1983	ILO		
(viii) 4 week annual courses on occupational toxicology. 5/	Annually	WHO	Held in Belgrade	
(ix) Financing of courses and education projects with one environmental or working environmental component. 5/	Annually	World Bank		
<u>Intersectoral</u>				
(i) Meeting of employers' organizations on environmental policy	1982	ILO, UNEP	Parallels similar meetings in 1980 for worker's organizations	Report to be published in 1982-1983
<u>Maintenance of pollution control equipment in industry</u>				
(i) Regional training workshops covering air and water pollution and solid waste disposal	1982-1983	UNEP, UNIDO		
<u>Maritime transportation</u>				
(i) Development of new teaching material for maritime academies concerning protection of marine environment including the requirements of international conventions relating thereto. 6/				

6 / Also relevant to Marine pollution.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(b) <u>Information exchange</u>				
(i) Operation of a computerized storage and retrieval system for information on industry and environment	1982-1983	UNEP, UNESCO	Ongoing since 1980	Number of bibliographic and topic file inputs, number of queries
(ii) Reply to queries on industry and environment	1982-1983	UNEP, UNIDO	Ongoing since 1980	Number of answers
(iii) Publication of a quarterly newsletter <u>Industry and Environment</u> (English and French editions)	1982-1983	UNEP	Ongoing since 1980. Spanish edition from 1982	Mailing list (Goal: 6,000 in 1983)

(d) Budgetary implications

	<u>1982</u>	<u>1983</u>
	<u>\$US</u>	<u>\$US</u>
UNEP	1,400,000	1,500,000

E. OCEANS
(budget line 05)

1. Introduction

102. This section covers three programmes, marine pollution, marine living resources and the regional seas programme. Taken together, the three constitute an integral whole and complement the GEMS programme in open ocean monitoring. The programmes on living marine resources and regional seas exemplify the amplification and application of environmental management tools and principles, and have a bearing on the programme on environmental law.

2. Marine pollution
(budget sub-line 0501)

(a) Background

103. The Stockholm Action Plan included a number of recommendations in particular 86-94 concerning the marine environment. In order to reduce the threat to global marine ecosystems from pollution, a first step is to assess the present state of ocean pollution, its origins and impacts on marine ecosystems, and the monitoring of the oceans was the subject of Governing Council decision 32 (III) of 2 May 1975. To this end, activities are under way to identify the present quality of the marine environment, the factors currently having deleterious impacts on it, and future trends. Additional action is needed 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 important that national institutions be strengthened so as to enable them to participate effectively in co-operative environmental assessment programmes.

104. As a result of the assessment process, facts will be established to permit identification of remedial measures, which will include the need for Governments to ratify and implement international conventions on the control and prevention of marine pollution.^{7/} At the global level, international and scientific organizations and institutions play an important role in research. During 1982-1983, through GESAMP (jointly sponsored by the United Nations, UNEP, FAO, UNESCO, WHO, WMO, IMCO and IAEA), and specific studies and reports will be prepared on such matters as the over-all assessment of the health of the oceans the interchange of pollutants between the atmosphere

^{7/} The 1954 International Convention for the Prevention of Pollution of the Sea by Oil and its amendments; the 1972 Convention on Prevention of Marine Pollution by Dumping of Wastes and Other Matters; the 1973 International Convention for the Prevention of Pollution from Ships as modified by the Protocol of 1978 and the convention that will result from the United Nations Conference on the Law of the Sea.

and the oceans, the evaluation of hazards of harmful substances carried by ships, and marine pollution implications of coastal area development.

105. In recent years pollution of the oceans as a result of serious accidents, such as the Amoco Cadiz incident, has caused major concern among Governments and the international community, as reflected in both national measures, and resolutions of various intergovernmental bodies. Recent legislative authority is implicit in the goals, objectives and strategies approved by the Governing Council GEMS, living marine resources, and regional seas, 8/ General Assembly resolution 34/183 of 18 December 1979 is also relevant.

(b) Objective

106. The objective of the programme is to assess and inform Governments about the state of ocean pollution, the sources, pathways and trends of this pollution and its impact on marine ecosystems, human health and amenities.

8/ See UNEP/GC/INFORMATION/1/Rev.2, pp 2-3 and 28-29.

(c) Activities to advance the objective

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Review of the health of the oceans	1982-1983	GESAMP	Ongoing since 1979	First interagency assessment of problems related to global ocean pollution
(ii) Feasibility studies of open-ocean monitoring of selected pollutants, and related pilot projects	1982-1983	GESAMP	Ongoing since 1980	Agreement on methodology which may be used for open ocean monitoring
(iii) Evaluation of the hazards of harmful substances carried by ships	1982-1983	GESAMP	Ongoing since 1980	
(iv) Interchange of pollutants between the atmosphere and oceans	1982-1983	GESAMP	Ongoing since 1980	
(v) Studies of waste disposal at sea and development of criteria for the identification of particularly sensitive sea areas	1982-1983	GESAMP	Ongoing since 1980	
(vi) Development of an oceanographic model for the dispersion of waste disposed in the deep sea	1982-1983	GESAMP	Ongoing since 1980	Periodic publication of reports for use by international organizations and Governments
(vii) Review of potentially harmful substances	1982-1983	GESAMP	Ongoing since 1980	
(viii) Study of biological effects of thermal discharges in the marine environment	1982-1983	GESAMP	Ongoing since 1980	
(ix) Study of pollution arising from the exploration and exploitation of the sea bed	1982-1983	GESAMP	Ongoing since 1980	
(x) Enhancing the technical capabilities of developing countries to help them implement international agreements for the protection of the marine environment	1982-1983	UNEP, agencies	Ongoing since 1980	Provision of technical assistance to developing countries

(d) Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	400,000	500,000
WMO	5,000	5,000
IOC Regular Programme	80,000	80,000

3. Living marine resources
(budget sub-line 0502)

(a) Background

107. The legislative authority for this programme stems from recommendations 32, 33, and 46-50 of the Stockholm Action Plan, which aimed at strengthening the conservation of the marine living resources and their ecosystems. Subsequently, the Governing Council decided that conservation of nature and marine living resources should be one of the priority areas for action, and approved, by decision 29 (III), a set of objectives and strategies. (Decisions 33 (III), 59 (IV), 82 (V), 88B (V), and 8/6, section IV, are also relevant to this programme, which was reviewed at a thematic joint programming meeting in Rome in 1979. During 1980, emphasis has been placed on the efforts to develop an action plan for marine mammals whose implementation in the first phase would form the main focus for the period 1982-1983, with plans for the second phase being developed during 1983.

(b) Objective

108. The over-all objective is to assist Governments in maintaining the productivity and health of marine ecosystems and keeping their populations of animals and plants at, or restoring them to, optimum levels.

(c) Activities to advance the objectives

Objective 1

To stimulate the protection of threatened species of marine mammals and their habitats and the conservation of those whose populations are at sustainable levels.

Strategy

Implementation of the plan of action for the conservation of marine mammals.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Implementation of the plan of action on conservation of marine mammals	1982-1983	UNDP, UNEP, UNESCO, FAO, (IOC), IUCN, IWC, economic commissions, Governments.	Phase I of the plan of action, which will be available to Council participants at the ninth session, covers 1982-1983	The degree of support and implementation of the plan of action by Governments

Objective 2

To stimulate, in the developing countries of the tropics and sub-tropics, protection of threatened stocks of marine fishes, conservation of those stocks which are at sustainable or optimum levels and to protect the habitats forming the bases of the fishery resources.

Strategy

Assistance to Governments in the implementation of actions leading to conservation of fishery resources and their habitats in the tropics and sub-tropics.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Advise on development and rational management of fishery resources in the exclusive economic zones including legislative aspects	1982-1983	FAO, Governments	Ongoing FAU programme	Governmental and international response to proposals for the conservation of fishery resources. (Relevant to strategy elements (i)-(iv))
(ii) Assistance in increasing the competence of developing countries in conservation including management of fishery resources with the aim of making them self-sufficient in this field	1982-1983	FAO, Governments	Ongoing FAO programme	
(iii) Development of better methods of resource evaluation and improvements in resource management	1982-1983	FAO, Governments	Ongoing FAO programme	
(iv) Monitoring of the progress made in rational conservation, including utilization of fishery resources	1982-1983	FAO, Governments	Ongoing FAO programme	
(v) Convening of scientific workshops on the conservation of coastal and inshore ecosystems and marine living resources of Asia and the Pacific and Latin America	1982-1983	UNEP, FAO, UNESCO, Governments	To be implemented mainly by FAO, UNESCO and Governments	Proceedings of workshops
(vi) Assistance to Governments in the implementation of recommendations and guidelines formulated by regional workshops in Africa, Asia and the Pacific and Latin America	1982-1983	UNEP, FAO, UNESCO, Governments	To be implemented mainly by FAO, UNESCO and Governments	

Objective 3

Assistance in the conservation of other groups of marine animals, particularly those in unique and critical habitats threatened by over-exploitation or habitat disturbance.

Strategy:

Preparation of overviews of threatened marine species and their habitats and identification of major problems for their conservation.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Assistance to Governments in field surveys leading to recommendations for the identification, selection, establishment and management of coastal and marine protected areas; review of reports of surveys by regional workshops.	1982-1983	UNEP, FAO, UNESCO, IOC, IUCN	Responding to requests within the framework of the World Conservation Strategy	Publication of report and positive response on the part of Governments to recommendations made at the regional workshops.
(ii) Promotion of national governmental action on recommendations and guidelines formulated by the regional workshops	1982-1983	UNEP, Governments		Governmental and international response to workshops' recommendations
(iii) Further elaboration of principles, criteria, and guidelines for the selection establishment and management of marine and coastal protected areas, as well as of a classification system for coastal and marine environments.	Ongoing	UNEP, IUCN	Started in 1975. To be implemented mainly by IUCN	Publication of guidelines and classification system
(iv) Preparation and publication of case histories of established and developed coastal and marine protected areas, including a technical paper on their role in <u>in situ</u> genetic resources conservation	Ongoing	UNEP, IUCN	Started in 1981. To be implemented mainly by IUCN	Publication of case histories

(d) Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	300,000	300,000
UNESCO, Regular Programme	160,000	160,000
UNESCO, Extrabudgetary	500,000	500,000

4. Regional Seas Programme
(budget sub-line 0503)

(a) Background

109. With the Third United Nations Conference on the Law of the Sea concentrating on complex and multifaceted issues and problems relating to the establishment of a new regime for the oceans and their resources, UNEP, from its inception, has concentrated primarily on a regional approach to marine questions. Over the years the Governing Council has expanded the scope of the seas covered, and the programme presently includes the Mediterranean, the Kuwait region, the Caribbean, the West African region, the Red Sea, the East Asian Seas, the South West Pacific, the South East Pacific, the South West Atlantic and the East African region.

110. In the development of action plans for each of the above seas, the secretariat is guided by the views of Governments, the Governing Council and regular interagency consultations. Fourteen specialized organizations of the United Nations system are taking part in the development and implementation of the action plans, under the over-all guidance of UNEP. While the programmes are at different stages of development and may also differ from each other depending on the prevailing factors in the region, each tends to proceed on the basis of some or all of the components assessment, management, including international agreements, and supporting measures. Progress in their implementation is most advanced in the Mediterranean and the Kuwait region where action plans have been adopted, conventions ratified; trust funds established and numerous actions already initiated. The Action Plan for the Red Sea was adopted in 1976 and plans for the remainder of the regional seas programmes with the exception of those for the South West Atlantic and the East African region, which are only in the initial stages, will be adopted in 1981 or 1982.

111. The goals, objectives and strategies of the programme are restated in UNEP/GC/INFORMATION/1/Rev.2 pages 28-29; and the relevant recent Governing Council decisions include 82 (V), 6/2 and 8/13. Goal 15 for 1982, which calls for the adoption and implementation of action plans for each of the regional seas covered by UNEP programmes, is substantially implemented, except in the case of those seas only recently included in the programme.

112. The objectives, strategies and activities for inclusion in section (c) below relating to the Mediterranean, Kuwait, Caribbean, West Africa, and East Asian Seas will be defined by intergovernmental meetings scheduled in March and April 1981 and will be included in Addendum I to this document.

(b) Objective

113. The objective of this programme is to promote the development, adoption and implementation of action plans for the protection of the marine environment in various regional seas.

(c) Activities to advance the objectives

Development of additional regional seas programmes

Objective

To develop action plans for regional seas according to the request of States bordering such seas.

The Red Sea

Objective

To provide support to ALECSO in the implementation of the action plan, and to have a regional convention agreed upon and signed by 1983.

Strategy

The co-ordination of the activities relevant to this region is now handled by ALECSO. Regular joint ALECSO/UNEP programming sessions are convened to discuss the development of the projects supported by UNEP.

Elements of the strategy

Development of a convention for the area

ALECSO, UNEP

1982-1983

Main actors

Remarks

Achievement indicator

Adoption of a convention

The South-West Pacific

Objective

To have a regional action plan adopted and its major components operational by 1983.

Elements of the strategy

Implementation of the action plan to be adopted at the Regional Conference on Human Environment in the South Pacific in 1982

Date of action

1982-1983

Main actors

Governments,
ESCAP, UNEP,
other
United Nations
organizations,
SPEC, SPC

Remarks

Will continue beyond 1983

Achievement indicator

Adoption and initial implementation of the action plan

The South-East Pacific

Objective

To have a regional action plan adopted and its major components operational by 1983.

Element of the strategy
Implementation of the Action Plan adopted at 1981 Inter-Governmental Meeting

Date of action
1982-1983

Main actors
CPPS, UNEP and Governments

Remarks
Implementation would start in 1981 and continue beyond 1983

Achievement indicator
Substantial implementation of the Action Plan

South West Atlantic and East African regions

Element of the strategy
Initial steps towards a draft action plan

Date of action
1982-1983

Main actors
UNEP, agencies Governments

Remarks
Preliminary steps taken since 1980. Will continue beyond 1983

Achievement indicator
Agreement at the expert level on draft action plans for consideration by Governments

(d) Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	4,000,000	5,000,000
IOC, Regular Programme	1,000,000	1,000,000
IOC, Extrabudgetary	2,000,000	2,000,000

F. ENERGY
(budget line 07)

1. Background

114. The United Nations system has long been involved in ad hoc activities in the area of energy. These include gathering statistics on commercial energy production and consumption (Statistical Office), promotion of peaceful uses of nuclear energy (IAEA), exploration and development of some renewable sources of energy (UNDP, World Bank, CNRET), training, education and research (UNITAR, UNESCO).

115. Since the early 1970s, UNEP and other United Nations bodies have been involved in an increasing number of activities in the area of energy.^{9/} Particular emphasis has been given in these activities to the development of alternative sources of energy (especially renewable sources of energy), the importance of which has been recognized by the General Assembly in deciding to convene in 1981 the United Nations Conference on New and Renewable Sources of Energy. Various members of the United Nations system are also active, at Level Two, on questions relating to other forms of energy: an example is the ongoing work of ECE on the environmental effects of electricity generation and coal and natural gas production.

116. The work of UNEP in the area of energy is related to activities in other areas, in particular to human settlements, human health, environmentally-sound and appropriate technologies, desertification, environment and development, etc.

2. Objectives

117. The over-all objectives of the UNEP energy programme, formulated by the Governing Council of UNEP^{10/} in response to the recommendations of the Stockholm Conference,^{11/} have been: (a) to promote the understanding of the environmental impacts 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; (b) to promote effective development of alternative environmentally sound sources of energy.

^{9/} See UNEP Report No. 5 (1979) and A/35/531 (1980) for a review of the activities of the United Nations System in the area of energy.

^{10/} GC Decisions 1 (I) para. 12 (g); 8 (II), para. 6; 29 (III), para. 9 (f); 34 (IV); 47 (N); 60 (IV); 82 (V); 7/3 para. 4; 7/9.

^{11/} Recommendations 57-59; 22, 70-95 and 106 are also relevant (A/Conf.48/14 United Nations Sales No. E. 73. 11. A. 14).

3. Activities 12/ to advance the objectives

Objective 1

To promote the understanding of the environmental impacts of production and use of energy.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) To keep under review the environmental impacts of different sources of energy	1982-1983	ECE, UNEP, WHO, IAEA		Publication of reports on different environmental impacts - identification of inadequacies for further action
(ii) Assessment of environmental impacts of new energy technologies	1982-1983	UNEP	In co-operation with some scientific institutions	Same as above
(iii) Studies on increasing efficiency of energy production and use, with particular emphasis on the environmental aspects of such conservation measures	1982-1983	UNEP, UNIDO, ILO		Publication and dissemination of results of the studies to be undertaken. Formulation of guidelines for the rational use of energy
(iv) Environmental cost/benefit studies on different energy technologies	1982-1983	UNEP	In co-operation with some scientific institutions	Publication and dissemination of results of such studies

12/ It should be noted that most of the above mentioned activities have strong educational and training components. Also some agencies (e.g. ILO, UNCTAD, World Bank, DTCD) are carrying out activities related to energy policies in developing countries.

Objective 2

To promote effective development of alternative environmentally sound sources of energy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Feasibility studies on harnessing renewable sources of energy in some countries	1982-1983	UNEP, UNIDO, CNRET, UNDP World Bank	Activities undertaken in co-operation with requesting governments	Publication of results of studies
(ii) Experimental demonstration of use of locally available renewable sources of energy in rural areas of developing countries	1982-1983	UNEP, UNIDO CNRET, UNDP	Same as above (programme is continuation of ongoing activities)	Results of pilot experiments to be published
(iii) Research and development in the area of renewable sources of energy	1982-1983	UNEP, UNITAR UNU, UNESCO	Other United Nations bodies are also involved	Publication and dissemination of results
(iv) Follow-up to the United Nations Conference on New and Renewable sources of Energy	1982-1983	UNEP	Other United Nations bodies may initiate activities	To be determined according to activities to be initiated

4. Budgetary implications

	1982 \$US	1983 \$US
UNEP	1,000,000	1,000,000
UNESCO, Regular Programme	350,000	350,000
FAO (provisional)	330,000	335,000

G. NATURAL DISASTERS
(budget line 12)

(a) Background

118. The Stockholm Action Plan, in recommendation 18 on natural disasters, called inter alia for an assesment of the overall requirements for the timely and widespread distribution of warnings which observational and communication networks must satisfy. In successive decisions including 8 A (II), section III 2; 27 (III); 29 (III); 50 (IV); 61 (IV); 82 (V); 89 (V) and 7/3 the Governing Council has given directives on the implementation of the natural disasters programme, focusing attention on early warning, preparedness planning, community preparedness and activities relating to prevention, mitigation and control of natural disasters.

119. Goal 16 for 1982, which calls for the 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, is of a continuing nature, and will require attention after 1982.

120. UNDRO is, by virtue of its mandate, the focal point in the United Nations system for disaster relief matters^{13/} and has important additional responsibilities in the advancement of disaster preparedness and the promotion of disaster prevention. Many of the individual activities in these areas also fall within the spheres of competence of other organizations, and in 1978, a memorandum of understanding on the environmental aspects on natural disasters was concluded between UNEP, UNDRO, WFC, UNIDO, ILO, UNESCO, WHO, and WMO, whereby they agreed to co-operate in specific areas, and also each of them being designated to take the lead in certain areas, bearing in mind each organization's constitutional obligations and prerogatives. The specific areas mentioned in the memorandum are: early warning systems, preparedness, prevention and mitigation, relief, rehabilitation and reconstruction, information education and training and technical assistance.

(b) Objective

121. The over-all objective of this programme is to assist Governments in preventing or mitigating disastrous consequences of certain meteorological and geophysical phenomena, focusing particularly on the optimum operation of early warning systems and the establishment and implementation of appropriate measures of preparedness for natural disasters and limitation of their environmental impact.

^{13/} General Assembly resolution 2186 (XXVI) of 14 December 1971, para. 3.

3. Activities to advance the objectives of the programme

Objective 1

To apply existing, and develop new, knowledge and techniques in the field of early warning systems, and disseminate them as widely as practicable.

Strategy:

Improvement and dissemination of scientific knowledge of disaster-causing phenomena and of the accuracy of prediction and warnings.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Further development of the operational capability for tracking and forecasting tropical cyclones within the WWF programme	Ongoing	WMO		
(ii) Improvement of techniques for storm-surge prediction schemes, and training in and dissemination of information on their use	Ongoing	WMO, UNEP	UNEP will join the ongoing programme subject to availability of funds	
(iii) Strengthening of flood-forecasting capabilities, particularly with respect to flooding associated with tropical cyclones and storms, and improvement of flood warning systems	Ongoing	WMO, UNEP	UNEP will join the ongoing programme subject to availability of funds	
(iv) Improvement of tropical cyclone warning systems	Ongoing	WMO, UNEP	UNEP will join the ongoing programme subject to availability of funds	
(v) Further development and updating of the meteorological components of the WMO Tropical Cyclone Programme (operational plans and programmes, reports on new methods and technology)	Ongoing	WMO	UNEP will join the ongoing programme subject to availability of funds	

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iv) Development of 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 dissemination of information on technological developments	Ongoing	UNDRO, WMO, UNESCO, ICSU, UNEP		
(v) Further development of the Tsunami Warning System for the Pacific	Ongoing	UNESCO, IOC, UNEP	UNEP will join in the efforts subject to financial availability	
(vi) Development of the basic principles of earthquake-resistant design and construction, particularly with reference to non-engineered housing in rural areas in developing countries	Ongoing	UNESCO, UNDRO, World Bank		
(vii) Measures to improve and develop pre-disaster arrangements for resources from donors for relief preparedness; maintenance of a year-round alert for reception, analysis and dissemination of information	Ongoing	UNDRO, World Bank, UNDP		
(viii) Disaster prevention measures during reconstruction planning	Ongoing	UNDRO, World Bank, UNDP		
(ix) Agreements reached on the inclusion of disaster prevention factors in development project planning	1983	UNDRO, UNDP, World Bank, UNIDO, regional development banks		

4. Budgetary implications

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	300,000	300,000
UNESCO, Regular Programme	300,000	300,000
UNESCO, Extrabudgetary	300,000	300,000

H. ENVIRONMENTAL LAW (budget sub-line 1002)

1. Background

122. The environmental law programme is conducted pursuant to General Assembly resolution 2997 (XXVII) which requests UNEP, inter alia, to "promote international co-operation in the field of the environment and to recommend, as appropriate, policies to this end". A number of Stockholm Action Plan recommendations, particularly recommendations 32, 50, 51, 70, 72, 85, 86, 92, as well as the Stockholm Declaration, called for the development of environmental law in relation to general or specific aspects of environmental concerns. Likewise, in resolution 3133 (XXVIII), the General Assembly requested the Governing Council of UNEP to continue to direct special attention to the question of environmental protection of the seas and oceans, in particular its living resources. Also, in response to General Assembly resolution 3129 (XXVIII) UNEP prepared fifteen principles on the conduct of States in the conservation and harmonious utilization of shared natural resources. The principles were noted by the General Assembly in resolution 34/186 of 18 December 1979; and are available to the international community for use as appropriate.

123. The following Governing Council decisions have provided UNEP with specific policy guidance concerning environmental law: 8 (II), section III; 35 (III); 66 (IV); 82 (V); 91 (V); 6/9; 7/11; 8/6, sections III and IV and 8/15. The latter called for the convening of an ad hoc meeting of senior Government officials expert in environmental law to assist in the preparation of the environmental law section of the system-wide medium-term environment programme. In addition goals 19 and 20 for 1982, which are of a continuing nature, set forth specific requirements for the development and sound implementation of principles and conventions in the field of the environment.

Goal 19

Wide acceptance by Governments and application of international conventions and protocols in the field of the environment, both those now existing and those being developed.

Goal 20

Agreement on the principles which should guide States in their relations with each other in respect of shared natural resources, the problems of liability and compensation for pollution and environmental damage, weather modification and risks to the ozone layer.

124. A thematic joint programming meeting took place in (FAO, Rome, September 1980) and gave further momentum to the environmental law programme. Environmental law serves as an important management tool for various other programmes, e.g. marine pollution, living marine resources, regional seas, wildlife and protected areas, etc.

2. Objective

125. The over-all objective of this programme is to assist Governments in promoting the progressive development and codification of environmental law, and the application of existing law relating to the protection of the environment. Specific objectives addressing this over-all objective are stated in section 3 below.

3. Activities to advance the objectives

Objective 1

To collect data and information on environmental law and publish them regularly with a view to programme development and evaluation.

Strategy

Compilation of data and information necessary to continued Level One and Level Two studies and to identify Level Three activities; periodic publication of selected data and information for use by Governments and other users.

Elements of the strategy

(i) Publication of UNEP register of multilateral environmental conventions in volumes, and annual reporting on the status of these conventions

Date of action Main actors

Ongoing UNEP

Remarks

Status report to be submitted annually to the Governing Council

Achievement indicator

Establishment of co-ordinated mechanisms of collecting, steering and disseminating data and information relevant to environmental law development; facilitation of easier access by Governments to the body of existing environmental law in order to promote its wider acceptance

(ii) Publication on continued basis of volumes of Handbook on Environmental Legislation and Machinery

1982-1983

UNEP and other interested bodies

(iii) Publication of periodical survey of environmental law literature

Ongoing

ICEL

(iv) Development of and provision of information on food and agriculture legislation

Ongoing

FAO

Objective 2

To promote the wider acceptance and sound implementation of international agreements in the field of the environment.

Strategy

Continuing appraisal of selected conventions and protocols, and co-operation with the Governments and international bodies concerned to promote their application.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Promotion of environmentally sound application of the convention to be adopted by the Third United Nations Conference on the Law of the Sea	Ongoing	UNEP, Secretariat of the United Nations Conference on the Law of the Sea, Governments	A working paper envisaged for the ad hoc meeting called for by decision 8/15	Increased number of agreements effectively enforced and parties adhering to existing instruments; Improved national capabilities (e.g. legislation and machinery) to enforce provisions of such instruments
(ii) Promotion of World Conservation Strategy	Ongoing	IUCN, FAO		
(iii) Analysis of selected conventions to ascertain difficulties Governments experience in becoming parties to or implementing them and making proposals for remedying difficulties	Ongoing	UNITA, convention depositories, and secretariats, regional commissions		

Objective 3

To contribute to the development and codification of a new body of international law in order to meet new requirements generated by environmental concerns and by the international strategy in the field of the environment.

Strategies

Elaboration and development of the principles proclaimed in the Stockholm Declaration and decisions of the Governing Council relating to the responsibilities of States in the field of environmental law.

Promotion of the conclusion of international agreements or conventions to deal with global environmental concerns as well as with specific environmental problems in given geographical contexts, and efforts to encourage international forums and organizations to take the environmental law aspects into account in their work.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Follow-up to the recommendations of the ad hoc meeting to prepare the system-wide medium-term environment programme on law	1982-1983	Governments, United Nations and other international bodies	Meeting scheduled for 1981; possible areas to be discussed, including regional inputs, will be reported to the Council at its ninth session	Increased number of environmental standards, guidelines and principles adopted by Governments to guide the conduct of States, and their application; conclusion of specific agreements and their wide and effective application. (Relevant to all four strategy elements)
(ii) Regional seas agreements in various areas	Ongoing	Governments, United Nations and other bodies concerned	See under regional seas programme	
(iii) Identification of regional or sub-regional shared natural resources aimed at initiating appropriate agreements to regulate the conservation and harmonious utilization of such resources using the 15 principles noted by the General Assembly in resolution 34/186	Ongoing	Governments, regional commissions, UNEP, FAO, IMCO, WHO	Report submitted to the Council at its ninth session (UNEP/GC.9/5/Add.2)	

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(iv) Preparatory work for a global convention for the protection of the ozone layer	Ongoing	UNEP, WHO, CEC, OECD, Governments		
(v) Preparatory work for a global convention on environmental impact assessment	1982-1983	UNEP, Governments, United Nations agencies concerned		
<u>Objective 4</u>				
To promote the development of new national environmental protection legislation, or the improvement of existing legislation, and its effective application in the ECLA region.				
<u>Strategy</u>				
Preparation of surveys on national environmental legislation in selected regions and status of their application, development of programmes to promote existing legislation and formulate new ones including technical co-operation.				
<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Consideration of developing legal guidelines on the use of natural resources for institutions in Bolivia, Ecuador and Peru	1982	Governments concerned, ECLA, UNEP	Project in pipeline	Development of new environmental protection legislation; improvement of existing legislation, promotion of enforcement of both existing and new environmental legislation. (Relevant to all three strategy elements)
(ii) Development of Environmental Legislation and Machinery in Latin America and the Caribbean	1981-1982	UNEP, Government of Venezuela	Project in pipeline	
(iii) Survey of national environmental legislation and machinery of Latin America in preparation for a regional intergovernmental meeting	1982	ECLA, UNEP	Continued from 1981	

Objective 6

To stimulate environmental law education and research on a continuing basis.

Strategy

Continued survey of ongoing environmental law research and teaching programmes; organization of seminars to develop such programmes further; establishment of a network of selected institutions for co-operative undertakings; provision of assistance to enable developing country experts to participate in these programmes.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(I) Biannual meetings of environmental law experts to consider new research programme requirements	1983	UNEP, ASIL	To be continued biannually	Development of co-ordinated research and education programmes in environmental law and institutional capabilities to undertake them
(II) Completion of phase 2 of the project "Environmental law in university education"	1982	UNEP, CIFCA, UNESCO, WHO, FAO, IUCN, IALS and others		
(III) Development of phase 3 - conduct of a seminar for universities already teaching environmental law and those wishing to include it in their curricula	1983	UNEP, UNESCO, IALS, interested United Nations agencies, universities and institutions	Materials developed in phase 2 to constitute an input	
<u>4. Budgetary implications</u>				
			<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP		450,000		550,000

Chapter III

SUPPORTING MEASURES

A. INTRODUCTION

126. The Stockholm Action Plan included recommendations on education, training, public information and financial and other forms of assistance which were recognized as supportive of environmental assessment and environmental management. The relevant recommendations for education, training and public information include numbers: 6-8; 13; 16; 18 (4); 19 (b); 31; 34; 73; 89 (d); 93-95 (e); 96-97 and 102 (f). Those on financial and other forms of assistance included, among many others, 1; 2 (1.c); 10; 12; 13; 15 and 108. The present chapter deals with four programmes: education, training, information and technical assistance. These programmes are not, however, all-encompassing; specific education, training, information and technical assistance activities are frequently referred to under the relevant programmes in chapters I and II.

B. ENVIRONMENTAL EDUCATION (budget sub-line 0305)

1. Background

127. Environmental education is the principal vehicle through which people's perception and level of awareness of environmental problems may be aroused or increased. The translation of scientific and technological knowledge into education systems and programmes is the key to a better understanding of environmental problems and of the management measures needed to solve them.

128. The Tbilisi Intergovernmental Conference on Environmental Education (October 1977) provided a framework for the implementation of its recommendations, which focused on the integration of environmental education into policies, legislation and planning process, the incorporation of the environmental dimension into education programmes, curricula, textbooks and other instructional materials, the promotion of research and application of its results, the extension of environmental education facilities to all levels of society with the aid of public information systems, including the mass media and other audio-visual mechanisms, and the promotion of effective co-ordination both nationally, regionally and internationally. The UNEP/UNESCO co-operative effort in environmental education for 1982-1983 is based on the recommendations of the Conference and the results and experience acquired in their implementation.

129. UNEP's goal 17 for 1982 calls for advanced implementation of the Plan of Action, arising from the Tbilisi Conference, and the development of a network of institutions offering a co-ordinated range of programmes for training and manpower development in environmental fields, and is being implemented in co-operation with UNESCO. The goal is also relevant to Environmental training below.

2. Objectives

130. The over-all objective of the programme is to catalyse national, regional and international activities as part of the implementation of the recommendations resulting from the Tbilisi Intergovernmental Conference.

3. Activities to advance the objectives

Objective 1

To develop, refine and establish the principles, theory and applications of environmental education.

Strategy

Review of available studies and technical materials developed prior to, for and after the Tbilisi intergovernmental Conference, in order to produce for the general public, organizations and institutions up-to-date publications on the philosophy, content and methodology of environmental education.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Preparation of publication on environmental education in the light of the Tbilisi recommendations	1982-1983	UNESCO, UNEP		Published materials and research reports on the theory and practice of environmental education
(ii) Research studies and experiments to further refine the concepts; content and methodology of environmental education	1983	UNESCO, WHO, UNICEF, UNEP		

Objective 2

To integrate environmental education into existing educational systems, programmes and procedures for both the formal and non-formal categories, taking into account the needs of urban and rural populations.

Strategy

Activities related to the development of new curricula, teaching materials, and the application of the results of pilot projects to instructional strategies for the various levels of environmental education.

Achievement Indicator
Published materials and research reports on the theory and practice of environmental education

Remarks

Main actors

Date of action

Elements of the strategy

1982-1983
UNESCO, UNEP

UNESCO, UNEP

(I) Incorporation of environmental education in the light of the Tbilisi recommendations

1983
UNESCO, WHO, UNICEF, UNEP

UNESCO, WHO, UNICEF, UNEP

(II) Research studies and experiments to further refine the concepts, content and methodology of environmental education

Objective 2
To integrate environmental education into existing educational systems, programmes and procedures for both the formal and non-formal categories, taking into account the needs of urban and rural populations.

Strategy
Activities related to the development of new curricula, teaching materials, and the application of the results of pilot projects to instructional strategies for the various levels of environmental education.

Achievement Indicator
The publication and use of curriculum (content and methodology) materials for educational personnel schools, school youths, workers, etc.

Remarks

Main actors

Date of action

Elements of the strategy

1982
UNESCO, UNEP, WHO, FAO

UNESCO, UNEP, WHO, FAO

(I) Incorporation of environmental dimension in the pre- and in-service training of educational personnel

Ongoing
UNESCO, FAO, ILO, WHO, UNICEF

UNESCO, FAO, ILO, WHO, UNICEF

(II) Development of environmental education curricula for schools, out-of-school youths and adults to encourage community participation in development activities

1982
UNESCO

UNESCO

(III) Presentation of ecological and hydrological studies in a form suitable for the development of courses for general education

Elements of the strategy

(iv) Strengthening of programmes for workers education towards rural/urban development

Remarks

Main actors

Date of action

ILO

1983

Objective 3

To develop and support programmes in education to generate environmental awareness at policy and decision-making levels, in both the public and private sectors, relating to all aspects of development.

Strategy

Identification of environmental elements to be incorporated into orientation and training programmes.

Elements of the strategy

(i) Organization of symposium for top Government planners on appropriate technology via IILS

ILO

1982

Remarks

Achievement indicator

Publication of the Symposium report on appropriate technology; adoption of policies and actions which include environmental considerations in development planning and activities; number of planners and decision-makers trained.

UNESCO,
ILO

1982-1983

(ii) Environmental management courses for planners, decision-makers, etc.

Objective 4

To assist Governments in the establishment of systems which will include the environmental dimension in policies, programmes and projects.

Strategy

Encouragement to Governments with a view to developing environmental education specific to various sectors of national development.

Elements of the strategy

(i) Technical assistance missions to member States for the development of environmental education programmes, including relevant legislation

Remarks

Main actors

Date of action

UNESCO, FAO,
WHO

Ongoing

Achievement Indicator

The enactment of legislation concerning environmental education, and policy declarations on environmental management

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(II) Systematic action to sensitize Governments to the need to include the development of environmental education programmes in projects for educational reforms and curriculum development	Ongoing	UNESCO		Inclusion of environmental considerations in UNDP country programmes
(III) Support for regional advisory services in environmental education	Ongoing	UNESCO		
<u>Objective 5</u>				
To provide facilities for, and encourage the development of, educational resources, instructional materials and audio-visual aids for the purposes of promoting environmental education.				
<u>Strategy</u>				
Preparation, refinement and publication/production of instructional resource materials including audio-visual aids for environmental education.				
<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(I) Preparation and publication of formal and non-formal source books for environmental education - a teachers' guide and glossary of terms	1982	UNESCO		Availability and use in teaching of pedagogical resources designed for environmental education
(II) Technical materials, including state of the environment reports and other scientific papers on environmental themes, to be translated and adapted for use in teaching and instruction at various educational levels	1982	UNESCO, ILO, WHO, FAO, UNEP		

Achievement indicator

Remarks

Main actors

Date of action

Elements of the strategy

(iii) Preparation of radio-cassette tapes and television films for use in mass environmental education through radio and television

UNESCO, UNEP

1983

Objective 6

To promote and support research, experimentation and appropriate evaluation procedures in environmental education with a view to producing concrete results.

Strategy

Commissioning of pilot projects, research studies and educational experiments, the results of which are to be applied to the design, implementation and evaluation of environmental education programmes.

Elements of the strategy

Remarks

Main actors

Date of action

Achievement Indicator

(i) Major evaluation of post-Tbilisi achievements, problems, trends and issues

By the end of 1982

UNESCO, UNEP

(ii) Pilot and experimental projects at national and sub-regional levels for the development of formal and non-formal environmental education

Ongoing

UNESCO

Published results of experiments and application to real programmes

Objective 7

To establish a system of information exchange and dissemination through regular publications and other channels of communication.

Strategy

Creation and development of an information network and a viable publication programme on environmental education.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Up-dating and expansion of the international environmental education network	Ongoing	UNESCO, UNEP		Network of national, regional and international environmental education centres; information and publication programme
(ii) Preparation and publication of directories of personnel, programmes, institutions, periodicals, bibliography, environmental education case and comparative studies	1982	UNESCO		
(iii) Continued publication of the Newsletter CONNECT	Ongoing	UNESCO		
(iv) Preparation and publication of text-books, monographs, etc. on environmental education and other environmental themes	1983	UNESCO, UNEP, FAO, WHO		

4. Budgetary implications.

	<u>1982</u> <u>\$US</u>	<u>1983</u> <u>\$US</u>
UNEP	1,300,000	1,500,000
UNESCO Regular Programme	400,000	400,000

C. ENVIRONMENTAL TRAINING
(budget sub-line 0306)

1. Background

131. Guiding principles in this area were first defined by the Stockholm Conference, and further refined at the Belgrade International Workshop on Environmental Education and Training (1975) and at the Tbilisi Intergovernment Conference on Environmental Education (1977). Environmental training has focused on the training of decision-makers, skilled personnel and technical manpower in environmental management and on the systematic incorporation of environmental components into the training activities of United Nations bodies and organizations. UNEP has supported national and regional training institutions or centres not only under this budget sub-line, but in other programme areas as well. The in-depth review on environmental training (UNEP Report No.9, 1980) identified priority areas for action in the light of current gaps in knowledge and action. Whilst all agencies are involved in environmental training in their fields of competence, (examples may be found in many other sections of the present report). UNESCO is involved in a particularly broad range of activities, providing support for training of engineers, economists, urban managers, biologists, ecologists, geographers, soil scientists, water resources specialists, marine sciences specialists, etc. In addition, it conducts courses in integrated management of the environment and its resources. For the UNEP 1982 goal, see under environmental education (para. 129 above).

2. Objective

132. The over-all objective of this programme is to catalyse and support the development and implementation of programmes and activities for the orientation and training of policy-makers, decision-makers and other officials involved in areas which affect the environment, and for the specialized training of professionals, technicians and vocational workers in specific environmental fields.

3. Activities to advance the objectives

Objective 1

To promote training programmes in environmental matters with a view to providing decision-makers involved in the field of the environment with an appropriate understanding of and competence, in such matters.

Strategy

Conduct of training activities in specific areas of policy, programming and implementation of national and regional development plans for officials, planners, policy-makers, specialists and other groups.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(I) Development of a training programme for economists and development planners	1982	UNEP, UNESCO		Incorporation of the environmental dimension in development policies and manpower development programmes
(II) Integration of the environmental dimension in ILO-assisted management training programmes	1982-1983	ILO, UNEP	Ongoing	Continuing delivery of package of "training of teachers materials" as part of the regular training programme of five management development centres in developing countries
(III) Continuation of general programme of environmental training of engineers	1982-1983	UNEP, UNESCO	UNEP support to recommence 1981	

Objective 2

To provide and support the training necessary for technicians and specialists involved in the various tasks associated with environmental assessment and environmental management.

Strategy

Stimulation of specialized training through institutions of excellence, regional and international programmes for professionals and others involved in environmental management and assessment.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Advanced environmental training courses in professional fields: engineering, hydrology, meteorology, agriculture, health, biology, ecology, etc.	1982-1983	UNESCO, WMO, WHO, UNEP, FAO		Increased application of environmental consideration in development planning projects and activities
(ii) Regional seminars on aspects of chemical evaluation	1982	WHO		
(iii) Seminars on background air pollution monitoring	1982-1983	WMO		
(iv) Seminars for national instructors in meteorology and environmental problems related to meteorology for particular regions	1982-1983	WMO		
(v) Seminars and studies on environmental and population issues	1983	UNFPA		Sensitizing decision-makers and technicians; numbers trained
(vi) Training courses in marine issues	1983	UNESCO, ALECSO		
(vii) Seminars on environmental aspects of rural and urban human settlements planning and management	Ongoing	UNESCO, UNCHS, UNEP, FAO, regional commissions		
(viii) Training in integral management of the environment and its resources	Ongoing	UNESCO		

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(ix) Training of ecologists and technicians in environmental management research projects	Ongoing	UNESCO)))	
(x) Workshop on Aquatic Pollution in Relation to Protection of Living Resources	Ongoing	FAO))))	Sensitizing decision-makers and technicians; numbers trained

Objective 3

To prepare resource materials for the support of training programmes in environmental fields.

Strategy

Activities related to research, application and the publication of instructional materials and audio-visual aids for environmental training.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Preparation and publication of guidelines for incorporating the environmental dimension in training programmes	1982-1983	UNEP		Published guidelines and their use in training curriculum and methodology
(ii) Preparation of the "Manual of Methods in Aquatic Environment Research"	Ongoing	FAO		Publication of manual
(iii) Expert group meeting on training methodologies	1982	All relevant agencies		

Objective 4

To create, by 1983, and maintain appropriate mechanisms for the effective international co-ordination, harmonization and development of environmental training programmes.

Strategy

Identification of, and support for, potential regional environmental training institutions and activities towards effective co-ordination, sharing of resources and experiences.

Achievement Indicator
Existence and proper functioning of a co-ordinated network of institutions

Remarks

Main actors

Date of action

Elements of the strategy
(1) International Conference on Environmental Training

1982

All relevant agencies

4. Budgetary Implications

	<u>1982</u> \$US	<u>1983</u> \$US
UNEP	1,200,000	1,300,000
UNESCO, Regular Programme	1,000,000	1,000,000
UNESCO, Extrabudgetary	2,500,000	2,500,000

D. INFORMATION
(budget sub-line 0303)

1. Background

133. The broad mandate to increase public awareness of environmental issues and concerns was clearly established in the Stockholm Action Plan. Of particular importance is recommendation 97, which called for an information programme designed to create environmental awareness and to associate the public with environmental management and control, using traditional and contemporary mass media of communication, taking distinctive national conditions into account, and providing means of stimulating active participation by the citizens, and of eliciting interest and contributions from non-governmental organizations. The recommendation also formulated for the first time the concept of World Environment Day, and called for the integration of relevant information on the environment in all its various aspects into the activities of the information organs of the United Nations system. Thus it outlined what are still the basic features of the UNEP information programme.

134. From its first session, the Governing Council has considered public information a priority activity. At its fourth ^{1/} and fifth ^{2/} sessions, the Council decided that the dissemination of environmental information to the public at large and to special interest groups should be an area of concentration for UNEP, and should incorporate significant publishing activity through a planned programme of publications.

135. The relevant UNEP goal for 1982 calls for established procedures for effective communications with Governments and information to the public at large. This implies a continuous programme of activities developing in parallel with the over-all environment programme as it is now and as its system-wide application is envisaged. There can be no defined point of achievement for this goal, nor any exact measure of the effectiveness of the public information programme. Its implementation is a continuing responsibility of the UNEP secretariat, with the material output increasing as substantive scientific information in the main programme areas is amassed and assessed. This must then be adapted to the perception levels of defined target audiences and communicated to the mass of people and to groups and individuals with the capacity to decide or influence environmental policies and development trends.

2. Objectives

136. Through increased material output and catalytic activity, corresponding to the increased over-all productivity of the environment programme, the objective is to develop and strengthen established procedures so as to communicate more effectively with Governments and the public at large through the dissemination of environmental information.

^{1/} 47 (IV).

^{2/} 82 (V).

3. Activities to advance the objectives

Objective 1

To communicate effectively with the public at large at local, national, regional and global levels, so as to stimulate a positive public response to environmental issues and concerns.

Strategy:

- Identification within defined categories of "target" public audiences for the environmental message;
- Assessment of the perception levels of these communities and identification of the most effective communications media, techniques, technologies, language, style of presentation and procedures for delivering information to the target audiences;
- Systematic collection and assessment of environmental trends, developments, events and issues of particular interest and/or concern to the target groups;
- Dissemination to each target group of relevant, substantive, fully-comprehensible information on environmental topics;
- Application of these strategies in close co-operation with governments and relevant organizations, in particular those of the United Nations system in the period before implementation of the system-wide, medium-term environment programme.

Elements of the strategy

- (1) Strengthening of the regional information programme in all regions, and the inception of an information support programme in the USSR/Eastern European area

<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
1982-1983	UNEP		Increase in the number of listed component disseminator/producers, including NGOs, in each of the six regional information networks; implementation of a new UNEP/USSR publications and information support programme

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(ii) Expansion of the regional network of "leverage centres" for the print media, co-operating United Nations, UNIC and Government information services, and main NGOs as information "multipliers"	1982-1983	UNEP agencies, Governments, NGOs	Ongoing	Expansion of the work programme of all of the regional information offices (Also relevant to element (iv))
(iii) Compilation of information marketing plans and expanded work programmes for each of the regions, increasing the two-way information exchange between the regional information officers and the Service at headquarters	1982-1983	UNEP		Compilation of fully-developed information marketing plans for each region
(iv) Development of the environmental news and feature service operated by each of the regional information officers for the regional media, and of efforts to catalyse production/dissemination of audio-visual materials by Governments, other organizations and private producers	1982-1983	UNEP		
(v) Increased subject and language adaptation of the annual World Environment Day (WED) media packs and increased distribution of the materials to the media through the multiplier network	1982-1983	UNEP/UNICs NGOs Governments	Ongoing	
(vi) Implementation of the regional segments of an information support programme for the tenth anniversary of Stockholm	1982-1983	UNEP/others		Completion of pre-implementation planning for the information support programme for the tenth anniversary of Stockholm

Objective 2

To communicate effectively to the public at large, and to defined special interest groups, through the medium of publications.

Strategy:

- Formulation of graphic standards and a unity of design for all UNEP publications;
- Improvement in quality, volume of output and cost effectiveness of all general public information publications of the Information Service;
- Improvement in quality, volume of output and targeted distribution of original publications from the programme of UNEP and/or other publications derived from co-operative/catalytic activities;
- Implementation of new publications projects;
- Application of these strategies, where appropriate, through joint projects and/or production with United Nations and other agencies, Governments and NGOs.

Elements of the strategy

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
(i) Further application of approved graphic standards and design format to all UNEP publications	1982-1983	UNEP	Ongoing	Production of a graphics standards/design manual and implementation of its provisions
(ii) Expansion of the output of news and illustration feature releases from the press and public affairs section of the Information Service at UNEP headquarters	1982-1983	UNEP	Ongoing	Continued, regular distribution of the <u>Mazingira and UNITERA</u> periodicals and of an increased volume of media releases. (Also relevant to elements (iii) and (iv))

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(iii) Expansion of catalytic activity to stimulate increased production of environmental information publications by Governments and supporting organizations, including IIED/Earthscan, ELC, the United States Environment Protection Agency, the Press Foundation of Asia and the Press Institute of India	1982-1983	UNEP, agencies		
(iv) Re-evaluation, revision and over-all improvement of production systems relating to projected publications of the programme of UNEP	1982-1983	UNEP	Ongoing	Increased production of UNEP programme publications
(v) Implementation of a revised UNEP/USSR publications and information support programme	1982-1983	UNEP/ UNEP/COM	Ongoing	Implementation of the USSR and China publications programmes (also relevant to element (viii))
(vi) Production of publications approved under the (proposed) information support programme for the tenth anniversary of Stockholm	1982-1983	UNEP/ agencies Governments, NGOs	Ongoing	
(vii) Production of <u>Mazingira</u> and <u>UNITERRA</u> periodicals in new formats, incorporating substantial changes in editorial content and presentation so as to target these publications to a wider general public audience; improvement of the marketing/distribution systems for the two publications so as to increase their circulations and cost-effectiveness	1982-1983	UNEP	Ongoing	

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(viii) Implementation of a new UNEP publications programme in the China	1982-1983	UNEP, agencies Governments NGOs	Ongoing	

Objective 3
To communicate effectively to the public at large and to defined special interest groups through the medium of audio-visual presentations.

- Strategy:
- Formulation of a new UNEP audio-visual support project, with allocations for a pre-planned programme of original, sponsored and part-sponsored production of films, film-slips, TV video, slide-tape and photographic presentations, radio programmes and graphic materials for exhibits;
 - Expansion of catalytic activity to stimulate supportive production of audio-visual materials by United Nations and other international organizations, Governments, NGOs and relevant institutions;
 - Application of these strategies, where appropriate, through joint projects and/or production with United Nations and other international organizations, Governments and NGOs.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(i) Implementation of the audio-visual support programme	1982-1983	UNEP, agencies, others	Ongoing	Increased volume of original and sponsored audio-visual production
(ii) Implementation of the new UNEP/USSR publications and information support programme, specifically its provisions for audio-visual production in the USSR	1982-1983	UNEP, UNEPCOM	Ongoing	
(iii) Participation in environmental film festivals and other international events with an audio-visual component	1982-1983	UNEP		

Objective 4

To communicate effectively with authorities, institutions, organizations and individuals with the capacity to decide or influence policies and positive action on environmental issues and concerns, promote the exchange of environmental information between nations and between defined communities of authority and influence, and encourage the dissemination of environmental information by international and national authorities to the public at large.

Strategy:

- Identification of international, regional, sub-regional and national bodies and individuals of authority and influence which may be designated "targets" for catalytic activity by the Information Service of UNEP;
- Assessment of the special environmental interests and concerns of the target groups of decision-makers;
- Provision of relevant information materials and specialist information services in support of the activities of the target groups in policy-making, planning and effecting development related to the environment;
- Motivation of the target groups to exchange, generate and disseminate environmental information, independently or through the information networks of UNEP;
- Application of these strategies in close co-operation with Governments and relevant organizations, in particular, those of the United Nations system, in the period before implementation of the system-wide medium-term environment programme.

<u>Elements of the strategy</u>	<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement indicator</u>
(I) Compilation of additional lists of "target" authorities, institutions, etc. noting their special interests and concerns	1982-1983	UNEP	Ongoing	Development of lists of target "decision-makers" and increased adaptation of information materials directed specifically at this high-level "audience". (Relevant to all three strategy elements)
(II) Adaptation of selected components of the Information Service work programme, notably in respect of UNEP-assisted projects, for direct communication to the targeted policy-making groups	1982-1983	UNEP	Ongoing	
(III) Increased exchange of information among nations and organizations	1982-1983	UNEP, agencies, Governments	Ongoing	

4. Budgetary Implications

	<u>1982</u> \$US	<u>1983</u> \$US
UNEP	2,800,000	3,200,000

E. TECHNICAL ASSISTANCE
(budget sub-line 0302)

1. Background

137. Within the framework of the Stockholm Action Plan, an international programme of technical co-operation was recommended in support of the implementation of the Plan, particularly for the developing countries. In pursuance of the recommendations mentioned in the introduction to this chapter, UNEP has technical assistance components in virtually all programmes. In addition, it has established regional advisory services attached to its regional offices to respond, on request, to the needs of Governments in each region, and supported the regional commissions in their environmental programmes.

138. Governing Council decisions which have helped shape the technical assistance programme are: 1 (I), sections I and VI; 8 A (II), section II; 29 (III); 82 (V), and 8/6, section IV, which approved the current objective, strategies and criteria, and deletes the previously approved goal for technical assistance clearing house.

2. Objectives

139. The over-all objective of the programme is to assist developing countries, on request, in identifying national and regional environmental priorities, particularly in environmental legislation and machinery, and to enhance their capability to participate in substantive environmental programmes.

3. Activities to advance the objectives

Objective

To assist developing countries, on request, in identifying national and regional environmental priorities, particularly in environmental legislation and machinery, and to enhance their capability to participate in substantive environment programmes.

Strategy

Provision of technical assistance to Governments and support of fellowship holders.

Elements of the strategy

(i) Provision, upon request, of expert advice on the most urgent environmental needs of developing countries; assessment environmental needs and help set up environmental legislation and machinery, and provision of fellowships and study tours for participants from developing countries to enable them to develop environmental skills

(ii) Strengthening of environmental capabilities at the regional level

<u>Date of action</u>	<u>Main actors</u>	<u>Remarks</u>	<u>Achievement Indicator</u>
Continuing	UNEP, Governments, United Nations agencies	Activity carried out mainly through the regional advisory services	The extent of action taken by Governments as a result of the advisors', consultants' and experts' reports, including the enactment of environmental legislation and the establishment of environmental machineries
Continuing	UNEP, regional commissions	Continued support of established Environment Co-ordination Units	The number of fellowships awarded in each region

4. Budgetary implications

UNEP	2,600,000
1982	\$US
1983	\$US
	3,200,000

Annex I

PROPOSED ALLOCATIONS FOR TWO-DIGIT BUDGET LINES

	<u>1982</u> (\$ million)	<u>1983</u> (\$ million)	<u>Total</u>
01 Human settlements and human health	4.5	5.5	10.0
03 Support	7.9	9.2	17.1
04 Environment and development	2.7	3.3	6.0
05 Oceans	4.7	5.8	10.5
07 Energy	1.0	1.1	2.1
10 Environmental management and environmental law	1.1	1.4	2.5
11 Ecosystems	7.5	9.3	16.8
12 Natural disasters	0.3	0.3	0.6
13 Earthwatch	7.5	9.4	16.9
16 Data	0.8	0.7	1.5
17 Arid and semi-arid lands, including desertification	4.0	5.0	9.0
Total Fund programme activities	42.0	51.0	93.0
Fund programme reserve	1.0	1.0	2.0
GRAND TOTAL	43.0	52.0	95.0

Annex II

SUGGESTED ACTION BY THE GOVERNING COUNCIL

The Governing Council may wish to consider:

(a) Expressing its views on the presentation of the medium-term plan, particularly what aspects should be emphasized or deleted in the preparation of the system-wide medium-term environment programme;

(b) Deciding, in the light of an agreed target for 1982-1983, on the allocations for the various components of the medium-term plan.
