UNITED
NATIONS

A E

General Assembly

Economic and Social Council

Distr.
GENERAL

A/44/339/Add.3 ✓
E/1989/119/Add.3
11 August 1989
ENGLISH
ORIGINAL: ARABIC/ENGLISH/
FRENCH/RUSSIAN/
SPANISH

GENERAL ASSEMBLY
Forty-fourth session
Item 83 (f) of the provisional agenda*

ECONOMIC AND SOCIAL COUNCIL
Second regular session of 1989
Agenda item 7 (f)

DEVELOPMENT AND INTERNATIONAL ECONOMIC CO-OPERATION: ENVIRONMENT

Progress made towards sustainable and environmentally sound development

Addendum

Report submitted by the United Nations Educational, Scientific, and Cultural Organization

---

* A/44/150.

UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL ORGANIZATION

REPORT ON PROGRESS MADE BY UNESCO TOWARDS THE OBJECTIVES OF ENVIRONMENTALLY SOUND AND SUSTAINABLE DEVELOPMENT (*)

(*) Prepared in accordance with decision 5.3.1 of the Executive Board at its one hundred and thirtieth session, November 1988.

LIST OF CONTENTS

I. INTRODUCTION

1. The Executive Board at its 129th session (25 May-10 June 1988) welcomed the response of the United Nations General Assembly to the Report of the World Commission on Environment and Development and to the UNEP document on Environmental Perspective to Year 2000 and Beyond, as embodied in Resolutions 42/186 and 42/187.

2. The Board emphasized that the achievement of environmentally sound and sustainable development constitutes a major challenge for the future of human society and reaffirmed that by virtue of the mandate given by its Constitution and has an important role to play in taking up this challenge in close co-operation with other appropriate bodies of the United Nations system.

3. At its 129th session, the Executive Board decided, in response to General Assembly resolutions 42/186 and 42/187, to send a consolidated report on the progress made by Unesco towards the objectives of environmentally sound and sustainable development. The report would be submitted to the General Assembly through the Economic and Social Council. This present report was prepared according to decision 5.3.1 of the Executive Board at its 130th session.

II. THE SPECIFIC CONTRIBUTION OF UNESCO TO THE CONCEPT OF SUSTAINABLE DEVELOPMENT

4. Unesco welcomes the general approach followed by the World Commission on Environment and Development (WCED) in highlighting the ethical, social, cultural economic and political implications of sustainable development, broadly defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

5. The Executive Board underlines the importance of paragraph 5 of resolution 42/187 in which the United Nations General Assembly:

"concurs with the World Commission that the critical objectives for environment and development policies which follow from the need for sustainable development must include preserving peace, reviving growth and changing its quality, remedying the problems of poverty and the satisfaction of human needs, addressing the problems of population growth and of conserving and enhancing the resource base, reorienting technology and managing risk, and merging environment and economics in decision-making".

6. The problematique addressed by the WCED report and by the Environmental Perspective, and the basic approaches advocated to cope with the problems identified are not new to Unesco. Over the years, the Organization has worked out specific approaches to development from the standpoints of education, science and culture. The most recent one was the in-depth study on "Unesco and the evolution of the concept of development" (127 EX/SP/RAP) which stressed the importance of the human criterion of equity and the social and cultural aspects of Unesco's approach to development. This approach included the fundamental value of the cultural identity of peoples which must be preserved and consolidated. Unesco's current position is that genuine development must be global, integrated, endogenous and centred on man.

7. Unesco's approach to sustainable development therefore involves the following:

(i) emphasizing the educational aspects of development and considering the human resources as the central factor in any development process, and fostering the access of all human beings to knowledge and the democratization of education;

(ii) recognizing that "culture constitutes a fundamental part of the life of each individual

and of each community and, consequently, development - whose ultimate aim should be focused on man - must have a cultural dimension"(1);

(iii) considering development as a multidimensional social process and not as a purely economic one, and stressing its ethical dimensions, in particular as regards the intergenerational rights;

(iv) recognizing the new driving force of science and technology, promoting through international co-operation the advancement of science and diffusion of scientific knowledge, enhancing national capabilities in science and technology as a prerequisite for endogenous development;

(v) strengthening of South-south co-operation (TCDC) with a view to fostering an exchange of knowledge and experience suited to the circumstances and degree of development of the developing countries, and, at the same time, North-south co-operation in the fields of advanced science and technology, so that these can not only be assimilated but also prompt creative responses in the countries themselves;

(vi) mobilizing the energies of the international scientific community for the purpose of defining fundamental ecological principles for the more rational use and better conservation of the resources of the biosphere, for improving the general relationship between man and his environment, and lastly, for foreseeing the consequences of his present actions for the world tomorrow (2);

(vii) acknowledging that the alleviation of poverty should be seen, not only in economic terms but also in terms of the quality of life.

8. The Executive Board, while reiterating its agreement with the general approach followed by the WCED and with the above-mentioned specific approaches of Unesco, notes that the broad philosophical and policy debate on the meaning of the sustainable development concept has not yet resulted in a universally accepted definition of this concept which might guide its practical application to development planning. It has therefore decided to invite the Director-General to take appropriate action, within Unesco's third Medium-term Plan, to define with greater clarity the concept of sustainable development in the field of Unesco's competence, with special emphasis on the needs of developing countries.

III. UNESCO'S PAST AND PRESENT ACTIVITIES RELATED TO SUSTAINABLE DEVELOPMENT

III.1 Natural and social sciences, education and culture

9. Unesco has a long history of concern with natural resources and environmental matters dating back to the early days of the Organization, such as when, exactly 40 years ago, in 1948 it sponsored jointly with the French Government the creation of the International Union for Conservation of Nature and Natural Resources (IUCN). Subsequently, IUCN has become a close partner in Unesco's ecological programmes. Also in 1948, the General Conference of Unesco meeting in Beirut decided to launch an Arid Zone Research Programme. Implemented through the 1950s and terminated in the early 1960s this Programme constituted a comprehensive and interdisciplinary study of the natural resources and ecosystems in the arid and semi-arid areas of the world, which are placed under considerable strain as a consequence of climate characteristics, population growth and

(1) Recommendation 27 of the World Conference on Cultural Policies, Mexico City, 1982.
(2) Extract from the inaugural message of the Director-General of Unesco, René Maheu, at the beginning of the first session of the International Co-ordinating Council of the Programme on Man and the Biosphere (Paris, 9 November 1971).

development needs. The Programme included aspects related to geology, renewable energy sources, geomorphology, climatology, hydrology, plant and animal ecology and conservation and can be considered as a forerunner in interdisciplinary scientific co-operation to help solve a major world problem.

10. Building upon this experience Unesco developed in the following years several international scientific programmes focused on specific types of natural resources, aiming at a better understanding of global processes in which these resources are involved and at setting up the scientific bases for their rational management.

The oceans

11. In 1960, Unesco created the Intergovernmental Oceanographic Commission (IOC). The purpose of the Commission is to promote scientific investigation with a view to learning to learning more about the nature and resources of the ocean through the concerted action of its members. Although IOC was set up within the framework of Unesco, the Commission developed co-operative arrangements with other international agencies and has become the lead organization in the United Nations system for the promotion of programmes relating to the marine sciences, the development and maintenance of ocean services and related activities of training, education and mutual assistance in this field. This special responsibility of the Commission was formalized through the adoption in 1969 of the agreement on the Inter-Secretariat Committee on Scientific Programmes Relating to Oceanography (ICSPRO), to which FAO, WMO, IMO, the United Nations and Unesco became part.

12. Over the years, IOC has developed five major ocean science programmes:

(i) the programme on Ocean Science in Relation to Living Resources (OSLR) is aimed at identifying fields of ocean science that could lead to a better understanding of the relationship between fish stocks and ocean environmental variability, to provide the scientific basis to fishery development and management;

(ii) the programme of Ocean Science in Relation to Non-Living Resources (OSNLR) is aimed at the study of regional geological and geophysical problems so as to provide the scientific basis for mineral exploration and exploitation;

(iii) the programme on Ocean Mapping which resulted, among others, in the publication of the fifth edition of the General Bathymetric Chart of the Oceans;

(iv) the Global Investigation of Pollution in the Marine Environment (GIPME) includes marine pollution research baseline studies and the development of a global marine pollution monitoring system in co-operation with UNEP, with a view to providing a sound scientific basis for regulatory action to protect the marine environment;

(v) the programme on Ocean Dynamics and Climate, including the oceanographic component of the World Climate Research Programme (WCRP) aims at improving the understanding of the ocean's role in climate change and variability.

13. As a complement to the programmes carried out under the IOC, Unesco - through its Division of Marine Sciences - conducts activities in the field of basic research and higher education, with particular emphasis on strengthening the role of universities and related infrastructures. A major domain of activities is that of coastal zones for which the Inter-regional Project on Research and Training leading to the integrated Management of Coastal Marine Systems (COMAR) has been developed. The COMAR project, in which sustainable development is a primary concern, aims at promoting research and training on the main aspects of the various coastal systems such as:

- their ecological characteristics and functioning;

- their interactions and exchange of energy and material and

- their relations with sea and land.

14. To ensure further harmonization and optimization of Unesco's resources in marine science, and to strengthen the application of science as a basis for rational use of marine resources, the Director-General has issued internal guidelines to:

(i) clarify the focus of the Division of Marine Sciences in relation to that of the IOC; and

(ii) strengthen the IOC's role within Unesco as the joint specialized mechanism for the organizations of the United Nations system parties to the ICSPRO agreement, for which the Director-General is the depository.

These, and other efforts to strengthen a coherent approach to the study of the oceans, a major governing force to the planetary ecosystem, will also be reflected in activities related to advice and assistance provided by Unesco to developing countries, through both regular programme and extra-budgetary funding. Through these measures, and within the overall framework of the Unesco-IOC Comprehensive Plan to Enhance the Marine Science Capabilities of Developing Countries, the programmes of the IOC and activities of the Division of Marine Sciences in this domain will be rendered more effective.

15. In addressing the opening session of the Joint Oceanographic Assembly (Acapulco, 23-31 August 1988), the Director-General emphasized the importance of managing the ocean as an integrated space, and in responding to the complexity of ocean processes, including those affected by man's activities. He encouraged those in attendance to reflect on how scientists, governments and international organizations, can work together to achieve universally acceptable socio-economic goals, to consolidate the ocean partnership, and achieve a rational utilization of the marine environment for the common benefit of mankind.

Freshwater resources

16. In 1964, the General Conference of Unesco launched the International Hydrological Decade (IHD) for the period 1965-1975. The overall objective of the Programme, as defined by the 1964 Intergovernmental conference, was "to accelerate the study of water resources and the regime of waters with a view to their rational management in the interest of mankind, to make known the need for hydrological research and education in all countries, and to improve their ability to evaluate their resources and use them to the best advantage". The IHD, which came to an end in 1974 was a remarkable example of international co-operation that made a significant contribution to the understanding of the processes occurring in the hydrological cycle, to the assessment of surface and ground-water resources throughout the world, to the training of hydrologists, and to the adoption of a rational attitude towards water use.

17. But gaps were still noted, particularly in the application of scientific advances to the solution of practical problems. The General Conference of Unesco therefore decided in 1974 to launch the long-term International Hydrological Programme with the aim of finding solutions to the specific water-related problems of countries in different geographical conditions and at different levels of technological and economic development.

18. At present the activities of the IHP cover four main areas:

(i) hydrological processes and parameters for water projects. Special emphasis is given to the interaction between climatic variability and change and hydrological processes and to hydrology of arid and semi-arid areas and of humid tropical regions in which most of the developing countries are situated;

(ii) the influence of man on the hydrological cycle (including water quality aspects). Studies undertaken include the effect of water projects and related changes in the hydrological cycle on economic, social and ecological conditions;

(iii) rational water resources assessment and management. As used in the IHP, assessment goes beyond the inventorying of available water resources; it also introduces evaluation aspects based on socio-economic and environmental considerations. Typical aspects considered in relation to integrated water management include those of alternative goals and objectives, a real distribution of resources and inter-basic transfers, conjunctive use of ground and surface waters, competitive uses and international co-operation in shared resources;

(iv) education and training, public information and scientific information systems. The education and training activities of IHP cover the various aspects of water sciences and are directed at all levels from middle-level technicians through undergraduate to postgraduate.

19. As a complement to the IHP activities, in 1981 three regional projects on the rational use and conservation of water resources in rural areas were begun in Africa, Arab States and Latin America and the Caribbean. They are intended to contribute to the growth of endogenous scientific and technical potential, to the progress of research and the development of information networks, and to the choice of technologies that are best adapted to local biogeographic and socio-economic conditions. A fourth regional project was launched in 1986 for Asia and the Pacific region to include both urban and rural aspects.

The resources of the biosphere and land-use planning

20. In 1968 Unesco convened an intergovernmental conference on the Scientific Basis for Rational Use and Conservation of the Biosphere Resources. The Conference, which was the first one convened at that level on the subject emphasized that the accelerated rates of economic and social development were intimately connected with problems of rational use of biosphere resources, that conservation of these resources should be considered as an element of their development and not in opposition to it, and that the improvement in quantitative and qualitative terms of the prosperity and well-being of societies was n with the quality of the relationships between man and his environment. The Conference recommended the development of an international research programme in this field, which was formally launched by the Unesco General Conference in 1970 as the Programme on Man and the Biosphere (MAB).

21. The concept of sustainable development was implicit throughout the planning and subsequent implementation of the MAB Programme. Thus the general objective of MAB was defined in 1971 as "to develop within the natural and social sciences a basis for the rational use and conservation of the resources of the biosphere and for the improvement of the relationship between man and the environment; to predict the consequences of today's action on tomorrow's world and thereby to increase man's ability to manage efficiently the natural resources of the biosphere".

22. The MAB Programme is intergovernmental in structure, is problem-oriented and is interdisciplinary. It is based on several continuum concerning the degree and extent of man's effects on different parts of the biosphere, spanning situations from sparsely to densely populated zones, from the core zones of protected natural areas where man's influence is

minimal to the centres of large urban conglomerations, third is a continuum of activities and functions - basic and applied research, demonstration and training, popularization and education where all relevant social sciences disciplines are called upon with the natural sciences to provide socially viable solutions to the problems at stake.

23. Significant contributions to land-use planning and the rational management of terrestrial resources were made through a number of MAB integrated pilot projects in specific climatic and geomorphological zones. Among them are projects dealing with the integrated management of arid lands and with combating desertification, with land-use planning forest regeneration and ecosystem rehabilitation in humid tropics, with integrated mountain development, with resource management in small islands and coastal zones when unbalanced economic activities and demographic pressures on limited bases may jeopardize the sustainable development of such areas.

24. One of the major themes of the MAB Programme identified by its International Co-ordinating Council in 1971 referred to "conservation of natural areas and the genetic material they contain". This theme led to the development of the "biosphere reserve" concept. Biosphere reserves are protected areas of representative environments which are internationally recognized for their value for conservation and for providing the scientific knowledge, skills and human resources to support sustainable development in the region concerned. A wide-ranging Action Plan for Biosphere Reserves was adopted by the MAB Council in 1984 and endorsed by the Executive Board (121 EX/Decision 5.3.2.) and the Governing council of UNEP (13th session, decision 13.28). At present, the biosphere reserves make up a worldwide network sharing research information on ecosystem conservation and management. By December 1988, 273 biosphere reserves in 70 countries were included in this network, which constitutes a firm basis upon which pilot demonstration projects of sustainable development are being conducted.

25. In 1986, the MAB Council endorsed the proposals prepared by a scientific advisory panel which defined a context for MAB research from now into the 1990s that suggested new objectives, a different combination of areas of knowledge and a different scale of problem definition. The challenge, as now defined, is how to identify, manage and respond to change in ways that balance social welfare and economic productivity with ecological sustainability and social innovation. Four new research orientations have been identified, which, with the evolving research instruments (MAB International Pilot Projects, comparative studies and biosphere reserves) will enable the MAB Programme to strive to combine change with continuity and to adapt its methodology and style so as to meet the new challenges and new problems of a changing world. These four orientations are: ecosystem functioning under different intensities of human impact, management and restoration of human-impacted resources; human investments and resource use; and human response to environmental stress.

Earth sciences

26. Environmental problems are dealt with, directly or indirectly, by a number of research projects in the framework of the International Geological Correlation Programme (IGCP) such as: comparison of major active faults, Quaternary processes and events in South-East Asia, comparative lacustrine sedimentology in space and time, past and future evolution of deserts, coastal evolution in the quaternary. Most of these are contributing to the "Quaternary Geosciences and Human Survival" subprogramme which started in 1987. This constitutes a geological approach to the issue of environmentally sound and sustainable development. The basic idea is that present-day changes cannot be extrapolated into the future unless their antecedents, the geological processes that have been operating for the past at least two million years, are duly studied and their trends reliability established.

27. In 1987 the "Geology for Economic Development" project was initiated. Its main objective is to develop the knowledge of the geological structure and mineral potential of the African and Latin American regions as a basis for mineral prospecting and exploration. Field studies were organized to improve the understanding of the geodynamic evolution of selected

Proterozoic belts. In addition, workshops were held on the use of mineral deposit models related to the exploration and exploitation of commodities of special relevance to developing countries.

28. Another project on "Geology and Environment" is being implemented in co-operation with UNEP. The project aims at providing policy guidelines for decision-makers and planners in government and industry related to geological factors (especially mineral exploitation) influencing the environment. Studies, research projects and workshops have been undertaken on the impact of mining and related activities on the environment, on the impact of water management projects on hydrogeological and engineering geological conditions of the lithosphere, and on the utilization of geology in land-use planning.

Natural hazards

29. In the early 1960s, Unesco's programme in the field of natural hazards has been concerned mainly with the scientific and technical aspects of earthquake risk reduction. However, in 1967, ECOSOC adopted a resolution recommending that Unesco take over from the International Relief Union responsibility for the study of natural disasters and continue the relevant activities of the Union. In 1968, the General Conference authorized the Director-General to develop the scientific study of natural disasters in general and of the means of protection against them. As a result, the activities of Unesco were expanded, from 1969 onwards, to cover, in addition to earthquakes, other natural hazards such as tsunamis, volcanic eruptions, landslides, avalanches and river floods.

30. At present, the Natural hazards Programme is part of Major Programme X dealing with human environment and natural resources. The purpose of the programme is to develop and disseminate scientific knowledge and technical means whereby natural hazards can be assessed and predicted and to foster the adoption of measures likely to mitigate their effects. It includes both risk assessment and risk management aspects. Risk assessment is based on the scientific study of natural processes causing disasters with a view to determining their characteristics and spatio-temporal distribution and on vulnerability studies of the element at risk (sites, properties, human life). Risk management refers to preventive (site selection and rational land-use planning, construction of hazard resisting buildings, protective engineering works) and preparedness (education of the public, defence and relief plans, etc.) measures.

31. The impact of the Natural Hazards Programme within Member States has been enhanced by the implementation of a number of projects at national and regional levels. They included the establishment of the Institute of Earthquake Engineering and Engineering Seismology of Skopje (Yugoslavia), the projects dealing with the Survey of Seismicity and Seismic Risk Reduction in the Balkan Region, the establishment of the Regional Centre for Seismology for South America (CERESIS), the development of the Regional Seismological Network in south-East Asia, the development of the Programme for Assessment and Mitigation of Earthquake Risk in the Arab Region (PAMERAR).

32. By its resolution 42/169, the United Nations General Assembly decided to designate the 1990s as an International Decade for Natural Disaster Reduction (IDNDR). A first meeting of the Ad Hoc International Group of Experts for the Decade was held in Geneva from 5 to 8 July 1988. As a recognition of Unesco's pioneering role in this field, the Secretary-General of the United Nations invited the Director-General of Unesco to open the meeting jointly with him and to address participants. The meeting, chaired by Dr. Frank Press, President of the U.S. National Academy of Sciences, set the framework for the IDNDR programme. Capitalizing on its past experience, Unesco is actively participating, in co-operation with other competent international organizations, in the preparations for the planning and subsequent implementation of the Decade.

Basic sciences

33. Unesco programmes in mathematics, physics, chemistry and biology and in some of the frontier areas of science and technology such as molecular and cell biology, biotechnologies and informatics aim at strengthening the national capacities, particularly in developing countries, and to facilitate the access of all nations to new advances in science and technology. One of the most productive mobilities for promoting international and regional co-operation has been the development of networks, including the International Biosciences Network, and the Asian Physics Education Network, and in 1988 the Natural Products Research Network was incorporated into the Unesco Basic Science Programme.

34. The programmes of all networks are decided by local scientists and their activities respond to the needs and the environment of the participating countries. A great proportion of the activities relate to training of young scientists. In recent years some of the networks have also been used to provide research services to research groups in developing countries.

Applied microbiology

35. The Unesco programme in applied microbiology with its implications for long-term sustainable development traces its origins back to 1946 when Unesco supported research that was geared to the conservation and applied use of micro-organisms. Since that time, Unesco activities in this field have been developed in co-operation with the International Cell Research Organization (ICRO), with the International Organization for Biotechnology and Bioengineering(IOBB) and the World Federation for Culture collections (WFCC) all of which were founded with Unesco support and encouragement.

36. In 1972 UNEP joined forces with Unesco and ICRO for the purpose of preserving microbial gene pools and making them accessible to developing countries. A major development of the UNEP-Unesco joint venture (1975-1984), with support also from other international agencies, was the establishment of a core network of six microbiological resources centres - MIRCENs - which has been expanded into a Unesco global group of networking institutions comprised at present of 17 centres. A significant activity of the MIRCENs is research and training. About 100 training courses have been held in topics that are directly or indirectly linked with sustainable development in developing countries such as nitrogen fixation, fermented food; biological pest control, veterinary microbiology; environmental microbiology, including biomass and biofuel production; culture collection maintenance.

Engineering Education and Technician Training

37. For the last twenty years, Unesco has been actively concerned in assisting Member States, and particularly developing countries, in the creation of a cadre of professional engineers and technicians without which sustainable development is impossible. Emphasis has been placed on graduate and post-graduate education and the training of high-level technicians, the need for equipment maintenance skills, the training of trainers and the development of university/industry links (technology transfer). Principal mobilities have been the organization of training workshops, assistance in the development of engineering curricula and the provision of technical information and exchange through international and regional networks. However, the needs of developing countries have grown faster than Unesco's ability to respond effectively to them, and therefore present and future mobilities are planned to make use of the latest educational technologies, in particular the use of multi-media learning packages, to increase by an order of magnitude the numbers of students trained. Emphasis in the future will be placed on the technologies essential for sustainable development, including electronics, computer studies, energy engineering, materials science and management.

Energy

38. Unesco's activities relating to energy started in the 1950s under the International Arid Zone Research Programme, within which energy problems confronting arid regions were under consideration. They continued with the convening in 1954 in New Delhi of the International Symposium on Solar and Wind Energy of the Arid Zone. Bearing in mind that energy sources are the basic currency of most developing countries, Unesco's present programme in engineering concentrates on the following activities:

(i) Development of solar powered photovoltaic devices for use in rural and isolated communities;

(ii) Support for the creation of a Global Energy Council to act as an advisory body to Member States or national and regional energy policies, and for the review and dissemination of state-of-the-art knowledge in energy production and conservation.

New and renewable energies

39. Unesco's activities relating to energy started in the 1950s under the International Arid Zone Research Programme, within which energy problems confronting arid regions were under consideration. They culminated in the convening in 1954 in New Delhi of the International Symposium on Solar and Wind Energy of the Arid Zone.

40. At present, Unesco's programme in new and renewable energies concentrates on the following activities:

- identification of fundamental scientific and technological energy problems requiring international co-operation, through the organization of periodical fora, and the publication of their findings;

- review and dissemination of state-of-art knowledge, and of the latest achievements in science and technology in selected energy fields, through working groups, seminars and symposia, and through studies and publications;

- promotion of regional co-operation in these fields, by helping to establish regional centres, and development of their activities;

- assistance to Member States in the development of their indigenous capacity for energy production, utilization and research, by the establishment of training and research institutions, through training courses, fellowships and field projects.

III.2 Human Resource Development

Educational policies

41. Human resources development has been one of the basic aims pursued by Unesco in all of its programmes, taking into account the dual role of human beings as both the means and the ends of development. Of particular relevance are Unesco's activities in the field of education designed to help to reduce illiteracy and the right to education.

General educational objectives

42. Such objectives included the general access to education (with emphasis on the reduction of illiteracy and universalisation of primary education), improving the quality and the relevance of education at all levels and to adapt educational content and methods to the requirements of contemporary society, assisting Member States in developing and improving

the formulation of educational policies and in adapting their educational systems to the local, regional and international environment. With the increase in the absolute number of human beings deprived of the minimum of literacy training or schooling required for their social and economic integration and the realization of the full range of their potential, the Organization has gradually assigned in its programmes the highest priority to literacy and the prevention of functional illiteracy.

43. During the 1960s and early 1970s, Unesco, in collaboration with UNDP, implemented the World Experimental Literacy Programme. These activities have demonstrated clearly that political commitment and public awareness of illiteracy are crucial for the success of any literacy campaign. At its 23rd session, the Unesco General Conference invited the Director-General to prepare a plan of action for the eradication of illiteracy by the year 2000. This plan of action, which is presently being designed jointly with the World Bank and UNICEF and should become operational by the year 1990, will have a two-pronged approach to foster the development and renewal of primary education and to promote the total eradication of illiteracy.

Environmental education

44. It is throughout of the world known that one of the most pressing concerns for today's world is the environmental quality. This concern has become the international goal of environmentally sound and sustainable development. For achieving this objective one recognizes the necessity to developing long-term environmental strategies one of which is the development of environmental conducted from pre-school through the university in school and out-of-school for present and future generations.

45. This education has been developed in the framework of International Environmental Education Programme Unesco-UNEP since 1975. The principles and orientations of this Programme have been defined by the Intergovernmental Conference on Environmental Education (Tbilissi 1977) and its Action Plan for 1990s established by Unesco-UNEP Congress (Moscow 1987). During the two last decades the main Environmental Education activities conducted which have direct and indirect bearing upon the promotion and enhancement of sustainable development are the following:

46. Development of content, methods and materials for environmental education in a coherent body of teaching materials comprising methodological guides, thematic modules and textbooks for use in general education and in pre-and in-service training as well as a series of posters and slides produced under the MAB programme "Ecology in Action". Pilot projects have been also carried out in different countries for training educators and developing programmes, curricula and materials suited to local condition.

47. Training of educational personnel through international, regional and national seminars on formulation of national policies, methods of pre and in-service teacher training and guidelines for the preparation of educational materials.

48. Development of International and Regional Networks through publication of Unesco-UNEP environmental education newsletter "Connect", in six languages (English, French, Spanish, Russian, Arabic and Chinese). Each issue of this newsletter contains extensive environmental education field reports and environmental education news and publications. "Connect" is thus a source of information, a teaching/learning instrument, a guide for action and a medium for exchange.

49. Promotion of research and experimentation by undertaking studies on Environmental Ethics, incorporation of environmental education into industrial education, introduction of environmental education into agriculture curriculum, incorporation of environmental dimension into University General Education, use of Ecomuseums and Natural and cultural

Heritage for Environmental Education of General Public, use of Biosphere Reserves for Environmental Education.

50. Development and adoption of a strategy for action in the field of environmental Education and Training for the 1990s. The objectives of this action plan are:

- strengthening of the international system for information and exchange of experience of the International Environmental Education Programme (IEEP);

- strengthening of research and experimentation on educational content and methods and strategies for the organization and transmission of messages concerning environmental education and training;

- promotion of environmental education through the development of curricula and teaching materials for general education;

- promotion of pre- and in-service training for qualified formal and non-formal environmental education personnel;

- incorporation of an environmental dimension into technical and vocational education;

- more effectively educating and informing the public about the environment through the use of the media and the new communication and information technologies;

- more effective incorporation of the environmental dimension into general university education through the development of study programmes, teaching materials and training, and through the establishment of appropriate institutional machinery,

- fostering specialized scientific and technical environmental training with a view to promoting the concept of sustainable development;

- emphasizing the teaching of ethical and cultural values underlying environmentally sound development and appropriate education and information of decision-makers and administrators;

- strengthening the international cooperation in the field of Environmental Education.

III.3 Protection of the cultural and natural heritage

51. Unesco's traditional activities for the protection of the cultural heritage have drawn the attention of both decision-makers and the general public to the tensions between the needs created by present patterns of development and the imperatives of heritage preservation. In mobilizing international solidarity for the preservation of major monuments, sites or historic cities the Organization's projects have sought to counteract the increasingly destructive effects of man-induced phenomena ranging from atmospheric pollution to the thoughtless demolition of old buildings to erect new urban structures. The efforts of Unesco have often promoted a vision of development and the application of policies, particularly on the urban scene, in which the social and human costs and benefits of heritage preservation have been taken into consideration.

52. The Convention concerning the protection of the world cultural and natural heritage adopted by the General Conference in 1972 and more commonly known as the "World Heritage Convention", has provided a unique framework for this purpose. Drafted for the protection of both cultural and natural properties deemed internationally to be of "outstanding universal value", the Convention in its preambular paragraphs clearly identifies threats to the survival of that universal heritage that stem precisely from some of the policies

and practices defined in paragraph 4 of the present document as being "unsustainable".

53. The convention is the first agreement among nations to enshrine the principle that the most outstanding examples of the cultural and natural heritage of humanity are a shared trust and therefore a shared responsibility. It is the only such agreement that links the natural and the built environment, that envisions "harmony between humanity and nature". As of January 1989, the Convention had been ratified or accepted by 108 Member States, thus becoming the world's most widely ratified instrument in the field of conservation. To date 315 cultural and natural sites have been inscribed on the World Heritage List and the Convention's mechanisms, in particular the World Heritage fund, have allowed Unesco to mobilize resources to protect many of these properties against not only the ravages of time and hazards but also the destructive concomitants of environmentally unsound and unsustainable development. These mechanisms have enabled the international community to reinforce the commitment of States Parties, laid down, in Article 5 of the Convention "to adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community and to integrate protection of the heritage into comprehensive planning programmes".

III.4 Cultural dimension of development

54. The WCED analysis of current world problems and appropriate approaches to solving them is further evidence of the emerging acceptance of culture as a key dimension of development for which the ultimate goal is to ensure the well being of each individual while respecting his human dignity and appealing to his social responsibility. These ideas were at the heart of the Unesco-convened World Conference on Cultural Policies (Mexico City, 1982), which stated in its Declaration that "balanced development can be achieved only by integrating cultural consideration in development strategies; therefore, these strategies should always take into account the historical, social and cultural context of each society".

55. Unesco has been striving for 20 years to have culture be considered as part of development. Its present programme on cultural development and cultural policies has undertaken numerous activities intended to foster a better understanding of the concrete significance of considering culture a dimension, and even the foundation, of economic and social development. Unesco has provided financial and intellectual support for a series of meetings on the cultural dimension of development (Hornbaek in 1981, Dakar in 1983, Helsinki and The Hague in 1985, Panama and Kinshasa in 1986, Seoul in 1987, Djerba, Havana, Libreville and Accra in 1988). Expert meetings have been organized on the integration of socio-cultural data in development planning (1984), theoretical impact of development experiences (1985), the outputs of development (1986), and the integration of cultural, educational, scientific and communication policies (1986). A number of studies were carried out or are in progress analyzing factual interactions between culture and industry, commerce, education and communication, scientific and technological innovation, population growth, environment, rural and urban development, agriculture, nutrition and health... Reference books, specialized bibliographies and repertories have been published. The international networking of research centres on the integration of cultural dimension in development is being prepared.

56. Unesco has contributed to research programmes conducted by the International Social Science Council on the introduction of a cultural dynamic into technological, economic and social change. Unesco also contributed to the evaluation of the United Nations International Strategy for Development for the 1980s, taking into consideration the cultural aspects of development. The first practical results have been reached through the integration of cultural aspects in technical and economical co-operation agreements: the Lomé Convention III, the Lagos Plan of Action and the co-operation agreements between Member States of ECOWAS. Betides, small pilot-projects, giving opportunity to observation of the introduction of the cultural factors in local development action have been carried out or are in progress in Mali, Tunisia, Algeria, Mexico, Dominican Republic, India, Sri Lanka.

/...

57. Training of decision-makers responsible for development projects is beginning to be reassented from a cultural perspective. Several training sessions have received the support of Unesco to sensitize future managers in both the public and private sectors to the cultural dimension of their jobs.

58. The follow-up to the above-mentioned activities is now being encompassed in the Organization's effort to implement the Plan of Action of the World Decade for Cultural Development (1988-1997), for which Unesco is the lead agency. The main objectives of the World Decade for cultural Development are in full accordance with the concept of sustainable development. In particular, a change in the nature and quality of growth and the reorientation of technology could complement the objectives of the Decade concerning the cultural dimension of development and a more extensive participation of the people in cultural activities. The plan of action of the Decade implies that every development process has to be elaborated according to an holistic approach, and an ecological conception.

59. The implementation of these objectives concern, beyond Unesco's fields of competence, the entire United Nations system. For this reason in one of its recent decisions the Administrative Co-ordinating Committee invited Unesco and the other interested organizations of the United Nations to cooperate closely and undertake joint efforts with a view to promote the integration of the cultural dimension into development projects. In this perspective it should be pointed out that this objective will consequently be given a high priority in the 3rd Medium Term Plan of Unesco (1990-1995).

IV. RECENT MEASURES CONCERNING THE PLANNING OF FUTURE ACTIVITIES RELATING TO ENVIRONMENTALLY SOUND AND SUSTAINABLE DEVELOPMENT AND THE STRENGTHENING OF INTER-AGENCY CO-OPERATION IN THIS FIELD

60. After the adoption by the United Nations General Assembly of resolutions 42/186 and 42/187, these resolutions were brought to the attention of the governing bodies of the various Unesco's intergovernmental programmes relating to environment and natural resources.

61. The underlying philosophy and goals of the MAB Programme can be considered as being entirely consistent, if not indeed synonymous, with sustainable development, as reflected by the matching of issues addressed in the Brundtland Report and the number of ongoing and emerging activities under the MAB Programme. Examples of such activities include the implementation of the Action Plan for Biosphere Reserves in respect to the Commission's concern about the extinction of species and the need for protected areas of a non-conventional type, field projects such as the TREMU (Turkana Resources, Evaluation and Monitoring Unit) in Northern Kenya aiming at improving the living conditions for previously nomadic tribes while conserving the natural resources of the region, and synthesis exercises for example on the driving forces and constraints in the land use of savannas. This latter exercise was being undertaken in part within the framework of one of the four emerging research orientations adopted by the MAB International Coordinating Council at its ninth session in 1986 on "human investment and resource use" which will focus on the interface between ecological and economic systems through examining the policy goals of environmental integrity, economic efficiency and equity. Also, during the tenth session of the MAB Council in November 1988 a scientific session was held at which one of the presentations was on sustainable development in the context of emerging environmental problems in the 1990s.

62. Aspects related to sustainable development and their implications for the third Medium-Term Plan of Unesco were also examined at the twenty-first session of the IOC Executive Council (7-15 March 1988). The Council considered that through improved

knowledge of the ocean and its role as a residence milieu for marine resources, Member States can also strengthen their capabilities to ensure sustainable development while contributing to the well-being of mankind as a whole. To meet these challenges, the IOC has identified five major directions as marking the concerted action of its Member States through the end of the century and beyond: (i) global climate research programmes and associates large-scale oceanographic experiments; (ii) research and monitoring of marine pollution; (iii) study of the marine environment as a whole - both coastal and open ocean - its physical and biological parameters and processes; (iv) greatly accelerated development of ocean services; (v) strengthening the ocean partnership through joint commitment to research goals at the global and regional levels and to the building up of required human and technological resources and capabilities.

63. The Intergovernmental council of the IHP at its eighth session (21-25 June 1988) adopted an outline plan for the fourth phase of the Programme (1990-1995) under the title "Hydrology and Water Resources for Sustainable Development". The themes included in the outline plan refer, among others, to interface processes between atmosphere, land and water systems; relationship between climate variability and hydrologic systems; changes in water quality through the hydrologic cycle; evaluation of the environmental status of fresh water systems and prediction of impacts of man's activities; integrated water resources development and the incorporation of risk-based decision-making; education, training and public information.

64. Within the consultations undertaken for the preparation of the third Medium-Term Plan, the Director-General convened a Panel of high-level experts (4-6 July 1988) to advise him on implications of the two resolutions adopted by the United Nations General Assembly on matters related to environmentally sound and sustainable development for Unesco's future programmes. The Panel which was chaired by Mr Mansour Khalid, Vice-Chairman of the WCED, concluded that Unesco now faces a unprécedented opportunity for capitalizing on the strengths of its past and present activities in taking up the challenge of sustainable development. Unesco should respond to this challenge by action at three levels. At a first level, sustainable development in its broadest sense should become a central goal which permeates the overall programme of Unesco in the field of education, natural sciences, culture, social sciences and communication. At a second level, many broad-scale themes and ongoing or planned activities of Unesco can contribute to the overall international effort for understanding the dimensions of sustainable development and for providing the logistic and scientific base to it including trained personnel. At a third level, Unesco should set up a number of projects which would demonstrate at the field level concrete approaches to sustainable development.

65. The Panel recommended that Unesco's efforts to promote sustainable development be carefully monitored. In this regard, two types of mechanisms were suggested. The first would be an independent advisory group reporting to the Director-General, which would monitor Unesco's contribution to sustainable development, maintain quality control and ensure the visibility of this contribution. This independent group would assess the extent to which Unesco had been contributing to the promotion of sustainable development at all three levels outlined above, and advise on future action. A second mechanism would be internal to the Unesco Secretariat, and here the Panel recommended that the Director-General exercise personal supervision of Unesco's activities on sustainable development, using whatever mechanism be considered most appropriate to monitor and co-ordinate Unesco's activities for sustainable development at all three levels.

66. The Panel recommended that Unesco's efforts to promote sustainable development be carefully monitored. In this regard, two types of mechanisms were suggested. The first would be an independent advisory group reporting to the Director-General, which would monitor Unesco's contribution to sustainable development, maintain quality control and ensure the visibility of this contribution. This independent group would assess the extent to which Unesco had been contributing to the promotion of sustainable development at all three levels outlined above, and advise on future action. A second mechanism would be internal to the

Unesco Secretariat, and here the Panel recommended that the Director-General exercise personal supervision of Unesco's activities on sustainable development, using whatever mechanism be considered most appropriate to monitor and co-ordinate Unesco's activities for sustainable development at all three levels.

67. The Panel also recommended that Unesco should advocate institutional co-ordination and co-operation, so that given the numerous and diverse initiatives for sustainable development emanating from the various institutions, undue duplication and/or competition is avoided. Particular emphasis should be given to harmonize the work of Unesco with that of the other United Nations agencies and especially UNEP, as well as of non-governmental organizations in their programmes that impinged on sustainable development, such as the World Climate Programme, the International Geosphere-Biosphere Programme of ICSU and the complementary initiative of IFIAS-UNU-ISSC on Human Response to Global Change. Within a broader international context, the feasibility of setting up an independent group to examine the institutional capacity of the United Nations to implement the recommendations of the World Commission report should be examined.

68. On the basis of the recommendations in the report of the Advisory Panel, the Executive Board, at its 130th session in November 1988, welcomed the intention of the Director-General to establish the following mechanisms:

(i) an independent advisory group to periodically monitor Unesco's contribution to sustainable development and advise him on future action with a view to increase the efficiency of relevant activities and give them better visibility.

(ii) an intersectorial committee to co-ordinate all Unesco's activities relating to environment, natural resources and sustainable development.

69. The Executive Board further invited the Director-General to strengthen Unesco's role as a clearing house of information on environmental matters through encouraging the exchange of results of scientific research on global environmental problems as well as related technical knowledge. In addition, the Executive Board invited the Director-General to study the possibility, in co-operation with UNEP and other international organizations, the possibility of a publication of an annual report on the state of the environment for use by decision makers.

70. The Executive Board brought particular attention to Unesco's role in the ethical dimension of environmental issues and more particularly the environmental problems arising from unethical practices such as the cases of dumping of toxic waste.

71. Unesco is determined to strengthen its co-operation with organizations of the United Nations system concerned, as well as with other competent, governmental and non-governmental, international organizations on matters relating to sustainable development. Unesco will support as appropriate UNEP's efforts to co-ordinate the activities of the United Nations in the field of environment, in particular through the Designated Officials for Environmental Matters ("DOEM") mechanism. The Organization will also provide all necessary support to the Secretary-General of the United Nations, to review and co-ordinate on a regular basis, through the appropriate existing mechanisms including the Administrative Committee on Co-ordination, the efforts of all the organs, organizations and bodies of the United Nations system to pursue sustainable development, as requested by the General Assembly in resolution 42/187.

72. In addition to the existing mechanisms for inter-agency co-ordination, the Executive Board believed that informal consultations among the head of United Nations organizations concerned by environmental issues might be useful for charting a common course of action. It commended the initiative of the Director-General to convene together with the Executive Director of UNEP, such an informal meeting at Unesco Headquarters on 8 July 1988; this

meeting was mainly devoted to issues related to climate change.

73. The Executive Board noted the "Joint Summary" of the Oslo Conference on sustainable development (9-10 July 1988), which was also attended by the Director-General of Unesco. It noted with satisfaction that the participants identified the following priority issues for United Nations action on sustainable development towards the year 2000 and beyond: developing human resources and fully integrated population policies, protecting the atmosphere and the global climate, ocean and water resources, halting desertification and countering deforestation, controlling dissemination of dangerous wastes and aiming at the elimination of such wastes, increasing technology co-operation, controlling soil erosion and the loss of species, and, above all, securing economic growth, social justice and a more equitable distribution of income and resources within and among countries as means for alleviating poverty. It agreed that to achieve these goals a now global ethic is needed based on equity, accountability and human solidarity - solidarity with present and future generations.
