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I. PRINCIPAL ACHIEVEMENTS OF THE INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

"It is recommended that the Secretary-General, the organizations of the United Nations system, especially Unesco, and the other international agencies concerned, should, after consultation and agreement, take the necessary steps to establish an international programme in environmental education, interdisciplinary in approach, in-school and out-of-school, encompassing all levels of education and directed towards the general public, in particular the ordinary citizen ... with a view to educating him as to the simple steps he might take, within his means, to manage and control his environment."

In 1975, Unesco and the United Nations Environment Programme (UNEP) launched, in response to Recommendation 96 (above), the International Environmental Education Programme (IEEP), which was designed to promote reflection and action, as well as international cooperation in this field. Its principal long-term objectives were: (i) facilitating the coordination, planning and programming of activities essential to the development of an international programme in environmental education; (ii) promoting the international exchange of ideas and information pertaining to environmental education; (iii) coordinating research to understand better the various phenomena involved in environmental teaching and learning; (iv) designing and evaluating new methods, curricula, materials and programmes (both in-school and out-of-school; youth and adult) in environmental education; (v) training and retraining personnel to adequately staff environmental education programmes; and (vi) providing advisory services to Member States in environmental education.

The action of the International EE Programme in the last nine years was conducted in three phases, centering successively on: (1) the development of a general awareness of the necessity of environmental education (EE); (2) the development of concepts and methodological approaches in this field; (3) efforts for incorporating an environmental dimension into the educational process of Unesco Member States.

During its first phase (1975-1977), the main action of the IEEP was devoted to the development of general awareness of the necessity of EE and
the identification of EE needs and priorities of Member States. The concern for problems of the environment and, more particularly, for an education pertaining to these problems -- which, before 1975, was a matter of interest for particular groups within a limited number of industrialized countries -- finds an echo in all regions of the world, as testified by the efforts and experiences made in this field by numerous countries with the cooperation of the IEEP (136 Member States -- about 85% of Unesco membership -- have been involved in various activities of the IEEP: 32 in Africa, 21 in Asia and the Pacific, 18 among the Arab States, 32 in Latin America and 33 in Europe and North America).

Among the first phase actions of the IEEP contributing most to the development of a global EE awareness was the series of international and regional meetings which led to the Intergovernmental Conference on Environmental Education (Tbilisi, USSR, 1977). In this connection, the International Workshop of Belgrade (1975) was particularly important: its recommendations and guidelines provided a preliminary frame of reference. The regional meetings of experts which followed, organized in Africa, the Arab States, Asia, Europe and North America, as well as an international survey of environmental education needs and priorities of Member States, contributed the next step by reviewing the Belgrade recommendations in the light of the needs and priorities of each of the different regions. The Tbilisi Conference culminated the first phase of the IEEP, laying the basis for the development of EE at the international level as well as strategies for the advancement of EE at the national level and the promotion of international cooperation.

A policy of regular, periodical information has also contributed considerably to international awareness of EE, notably through the International EE Programme's international newsletter Connect, which appears in five languages and is distributed to about 12,000 individuals and institutions of the five world regions, actively involved in the promotion and development of environmental education and training.

The development of a general awareness has continued to be a principal concern of all IEEP activities throughout the years.

The second phase of the IEEP (1978-1980) has been primarily devoted to the conceptual and methodological development of EE with the view to
providing Member States with useful references for the incorporation of an environmental dimension into general educational practice.

In this regard, the IEEP has initiated a series of studies and activities concerning different pedagogical aspects of EE, launched a series of pilot projects in different countries of various regions of the world and initiated a series of training workshops and seminars at the national, sub-regional and international levels.

Similarly, the IEEP has stressed the interdisciplinary approach taken by EE so as to effectively contribute to the solution and prevention of environmental problems in their multiple aspects. In this connection the IEEP supported an international seminar on interdisciplinary EE at the primary and secondary levels (Budapest, Hungary, November 1980). Publications of the IEEP, including its newsletter and books, such as Environmental Education in the Light of the Tbilisi Conference and Trends in EE, have helped to disseminate widely these conceptual and methodological approaches and orientations.

In order to keep the international community acquainted with EE activities and developments, the IEEP has continued to diffuse the newsletter Connect and has been steadily building up a computerized information system (CDS/ISIS) which is compatible with that of many other agencies and institutions. The database presently contains information on 900 institutions and 300 EE projects, published in regularly updated directories.

During the third phase of the IEEP (1981-1983), emphasis has been placed on the development of content, methods and materials for EE practises and training activities; experimental and pilot projects have been intensified, with a view to facilitating Member States’ efforts concerning practical incorporation of EE into school and out-of-school education. The contribution of the IEEP to the latter has, more particularly, involved three areas: the development of content, methods and materials for EE, the training of teachers and the promotion of international cooperation with and among Member States and other bodies in the field of EE.

As for educational contents, methods and materials relating to EE, the IEEP has developed a series of studies, research activities and projects leading to the preparation of methodological guides concerning approaches
for the incorporation of an environmental dimension into educational practices (i.e. interdisciplinary approaches in EE; problem-solving approaches in EE; environmental value education; evaluation methodologies for EE; modular approaches for EE; integration of an environmental dimension into social studies at school; integration of an environmental dimension into arts education; strategies for the training of teachers in EE; suggestions for developing national strategies for EE, etc.). With respect to the development of EE content, the IEEP has produced sourcebooks for teachers on formal and nonformal EE, a multilingual glossary of EE terms and an annotated bibliography. Complementary to these core elements, the IEEP has also prepared a series of educational modules dealing with major environmental problems (conservation of natural resources, pollution, desertification, human settlements, health and nutrition) and aiding teachers to conduct practical EE activities at primary and secondary school levels. Similarly, a series of modules designed to serve as teaching units for the pre- and in-service training of primary and secondary school teachers and supervisors in the areas of natural and social sciences has been developed. Adaptation of the educational and teacher-training modules to local conditions has been initiated.

In connection with the latter, mention should be made of the significant role played by the 23 pilot projects undertaken by the IEEP, which have contributed to the incorporation of EE into national educational processes by facilitating the training of teachers and educators by developing educational and informational materials suitable to local environmental situations and conditions, and by sensitizing the population in general.

With respect to teacher training in EE, the IEEP has organized 11 regional and subregional training workshops in Africa, the Arab States, Asia, Europe and Latin America and the Caribbean for such educational personnel as curriculum developers, teacher trainers and administrators, as well as 35 national training workshops in all regions. Similarly, an international training course was organized for participants from developing countries in September 1982 in Czechoslovakia.

As for international cooperation, the IEEP has significantly aided efforts of a number of countries concerning the incorporation of an environmental dimension into their educational systems. As a result of its various
activities in the areas of information, research and experimentation, as well as training, and as an outcome of specific technical missions undertaken by the IEEP staff, a number of countries have officially introduced EE into their educational plans, policies and reforms and have developed complementary legislation or appropriate institutional arrangements. In many cases these countries have established ministerial or interinstitutional committees with responsibility for the development of EE in various levels or modalities of the education system. (Among the countries concerned are: Australia, Colombia, Costa Rica, France, Federal Republic of Germany, Guatemala, Indonesia, Upper Volta, Ukrainian SSR, USA, USSR, Venezuela, and others.)

Through its activities, the IEEP has directly involved 133 countries from all regions of the world, more than 250,000 pupils in primary and secondary schools, about 10,000 teachers, educators and educational administrators, and has contributed to environmentally sensitizing some 1,500,000 persons. From another point of view, more than 1,700 primary and secondary schools as well as some 130 training schools and research centres have also been involved.

II. Fields of Action of the International Environmental Education Programme

In accordance with needs and priorities of Member States, the Unesco-UNEP International EE Programme has envisaged a progressive strategy involving different levels and modalities of education (primary and secondary school education, nonformal education). A multiple action has been undertaken in this respect to develop and reinforce the principal elements of educational processes (information, pedagogical research and experimentation on content and methods, training of personnel, preparation of educational materials) and to provide Member States with appropriate advice for the incorporation of EE into their educational policies and programmes.

Outputs of the IEEP could therefore be properly appraised in terms of these principal areas: (i) exchange of information and experience; (ii) research and experimentation; (iii) training of personnel; and (iv) preparation of educational materials.
EXCHANGE OF INFORMATION AND EXPERIENCE

This action is aimed at providing Member States and nongovernmental institutions, as well as specialists and the general public, with information and opportunities for exchange of experiences relating to research, policies, programmes, activities, training of personnel, materials and publications in the field of general environmental education.

Main activities undertaken in this field are:

1. **The quarterly newsletter Connect:** Since 1976 this newsletter has continuously been published, first in English, French and Spanish, then in Arabic and Russian. Commencing with the June 1980 issue, the Russian edition has been translated, printed and distributed in the USSR. Beginning with the March 1982 issue, the Spanish edition has been undertaken by Unesco's Latin American Regional Office for Education. The other editions are done in Paris, France. Connect is an integral component as well as the organ of the Unesco-UNEP International EE Programme, reaching over 12,000 specialists and institutions throughout the world involved in environmental education and concerns. It serves as the Programme's principal source for the gathering and dissemination of information about EE activities of both the IEEP and other governmental and nongovernmental programmes and agencies.

2. **Computerized Data Base on Environmental Education:** This system is composed of files on institutions and organizations, projects, activities and periodicals concerned with environmental education. It periodically produces three directories: (i) **Directory of EE Institutions**, containing detailed information on 650 institutions printed and distributed in 1981 in English, French and Spanish. The data base is continuously being added to and computerized for the next version of the directory, to be printed end of 1984. (ii) **Directory of Projects and Activities in EE**, containing descriptions of about 300 EE projects, is under preparation. It will appear in 1984 in English, French and Spanish. (iii) **Directory of EE Periodicals**, containing 200 items, will be printed in 1984 in English, French and Spanish.

3. **Thesaurus on Environmental Education Terms:** This thesaurus contains a classified vocabulary of 1200 EE terms in English. The terms are related to each other and also complementary to the Unesco Thesaurus, which comprises
many terms involving education and environmental sciences. Thus some 5000 terms pertaining to environmental education literature have been identified and grouped according to subject content. The thesaurus can serve as an indexing tool for environmental education publications and is of immediate use for abstracting library acquisitions and full-text description indexing of projects and activities. It will be disseminated to specialized institutions and organizations.


5. **International Study of Needs and Priorities in Environmental Education (1977)**. This study was carried out in three phases: (i) a world survey in 1975; (ii) regional reports in 1976; and (iii) a preliminary report entitled “Environmental Education Needs and Priorities: An International Survey”. The purpose of the study has been to furnish the International EE Programme as well as specialists and decision-makers in environmental education a valid base upon which further action can be pursued. For the IEEP in particular, the results of this study have been to orient other domains of action, especially activities related to innovative projects and expert meetings.

6. **International Study on Trends and Progress in Environmental Education since the Tbilisi Conference (1982)**. This study was conducted in two phases: (i) a survey in which 82 Member States responded and (ii) on whose basis was prepared a report entitled “Trends in Environmental Education since the Tbilisi Conference”. The report presents an overview of trends, needs and progress in environmental since the Intergovernmental Conference on EE, held in Tbilisi, USSR, 1977. Aspects considered are Unesco actions in this field and national EE trends related to policies, planning and mechanisms, content and methods, training of personnel, and research and experimentation.

7. **Meetings Organized by IEEP**

(i) International Workshop on Environmental Education, Belgrade, Yugoslavia, October 1975;
Regional Meeting of Experts on EE in Africa, Brazzaville, People's Republic of the Congo, September 1976;
Regional Meeting of Experts on EE in Latin America and the Caribbean, Bogota, Colombia, November 1976;
Regional Meeting of Experts on EE in the Arab States, Kuwait, November 1976;
Regional Meeting of Experts on EE in Asia, Bangkok, Thailand, November 1976;
Regional Meeting of Experts on EE in Europe, Helsinki, Finland, January 1977;
Intergovernmental Conference on Environmental Education, Tbilisi, USSR, October 1977;
International Seminar on Education and the Environment, Budapest, Hungary, 1980;
International Symposium on EE, Bulgaria, October 1983.

Meetings Supported by IEEP

International Conference on Environmental Education, New Delhi, December 1981;
Regional Conference on EE Transfers from ASEAN Universities, Serdang, Malaysia, August 1981;
Conference on the International Union of Biological Sciences, Canada, 1982;
Regional Workshop on EE and the Training of Ecologists in the African Francophone and Lusophone Countries, Kisangani, Zaire, May 1982;
World Conference on EE in Developing Countries, Cairo, Egypt, April 1983;
Symposium on "Long-term Development of Environmental Policy and Environmental Education in Europe", Vienna, Austria, June 1983;
European Seminar on the Role of the University in EE, Budapest, Hungary, October 1983.
This action is aimed at promoting and developing research activities dealing with content, methods, organizational mechanisms and training strategies for furthering formal and nonformal environmental education. It is also devoted to promotion of experimental and pilot activities stimulating environmental education practice in Member States.

Main activities undertaken in this field concern:

**Studies, Surveys and Research Activities**

1. **Study on the Incorporation of An Environmental Dimension into General University Education:** On the basis of selected cases, this study explores possible structures and content for an integrated course on environmental problems and issues for students of the natural sciences (under preparation).

2. **Study on the Development of Nonformal Environmental Education:** This study will be undertaken in some four countries to provide data and information leading to a comparative analysis on (i) establishment and operation of an infrastructure for the development of nonformal environmental education; (ii) the nature and mode of present and future activities and their implementation in nonformal environmental education; (iii) the major problems and constraints that have been encountered in the promotion and development of nonformal environmental education; and (iv) development of guidelines for further development of nonformal environmental education.

3. **Study on Incorporation of the Environmental Dimension into School Curriculum and Teacher Training in Technical and Vocational Education:** This study will be carried out in some four countries for obtaining data and information for comparison and analysis leading to: (i) identification of environmental concepts to be integrated into the curriculum of, and teacher training for, technical and vocational education; (ii) identification of teaching methodologies for the effective implementation of environmental education concepts; (iii) activities performed and evaluation techniques utilized for achieving environmental education objectives in technical and vocational education; (iv) suggested strategies and guidelines for effective incorporation of the environmental dimension into curriculum and teacher training in technical and vocational schools.
4. **Case Studies on National Mechanisms for the Development of Environmental Education**: A series has been prepared on institutional structures for developing environmental education at the national level, based on the experiences of selected countries. They have been reported upon in Connect.

5. **Survey on Curriculum Development in Environmental Education**: A survey in some 15 countries, undertaken in cooperation with the Unesco Institute of Education in Hamburg. On the basis of the study, a synthetic document on trends in environmental education curriculum is envisaged for production and dissemination.

6. **Survey on Teacher Training in Environmental Education**: This reviews trends and experiences in different regions of the world concerning incorporation of the environmental dimension into pre- and in-service teacher training programmes. It has been developed with the collaboration of appropriate institutions in the five regions: Africa, Asia, the Arab States, Europe and North America, and Latin America. The basic aim of this survey is to suggest ways and means for better organization and development of effective teacher training, taking into account different educational situations and systems. (A report will be published in 1984.)

7. **Research on the Development of Content and Methods for Teacher Training in Environmental Education**: This activity aims at the elaboration of teacher training objectives and the experimentation of environmental education curricula, methods and materials in selected Australian teacher training colleges. (A comprehensive report will be published in 1984.)

8. **Research on the Development of Interdisciplinary Content and Methods for the Incorporation of an Environmental Dimension into General Education in Polytechnical Schools**: This activity aims at the formulation of appropriate educational objectives and the experimentation of curricula, methods and materials in selected technical schools of Bulgaria. (A report will be published in 1984.)

9. **Research on the Development of Content and Methods for the Incorporation of an Environmental Dimension into Biology and Geography**: This activity aims at the formulation of appropriate objectives for secondary school education, the analysis of existing curricula and experimentation in selected
schools of content and materials for possible incorporation into activities of biology and geography education. (A report will be published in 1984.)


Pilot Projects *

Within the framework of experimentation and innovation activities, a series of pilot projects related to various environmental education topics, for both formal and nonformal education, was developed since the first phase of the IEE Programme in 1977. The main purpose of the pilot project is, on the one hand, to contribute to application of the knowledge and experience already gained in various aspects of environmental education, and, on the other, to play a significant role in the renovation of educational approaches to the environment and its problems. The pilot projects involve two distinct and equally essential phases: (a) an experimental phase aimed at the identification, analysis and solving of eventual problems linked to the institutional organization, pedagogical conception and implementation of environmental education innovations; (b) an expansion phase related to the diffusion of the innovations through the educational systems involved. The present situation of the pilot projects is as follows:

1. Pilot Project for Rural Populations, Colombia (1977-1979): This project was developed within the institutional framework of INDERENA, the Ministry of Education (General Direction for Training of Educators), and the Secretary of Education of Cundinamarca. The project aimed at developing educational materials and training activities, particularly related to environmental problems of coffee ecosystems in Colombia. Within this perspective, the project elaborated an educational package addressed to educators and student teachers of primary and secondary levels constituting: (a) 15 resource articles related to various aspects and problems of the Colombian environment; (b) six audio-visual programmes related to environmental issues of the coffee region of SaldaEa River Basin; (c) ten posters, one 16 mm film and a half-hour TV programme related to the same ecosystem. The educational package has been used in four experimental training seminars. The project resulted in the establishment of an Interministerial Committee for the Coordination and National Advancement of EE Activities.

* A detailed report on main results of pilot projects has been published as No. 13 of the IEEP's "Environmental Education Series".
Under the auspices of the Sectorial Unit of Investigation and Planning in Education of the Ministry of Education, this pilot project aimed at developing a basic scientific and technological awareness on the part of primary school students of major environmental problems of the "Altiplano Occidental" of Guatemala. Accordingly, the project planners included preparation of educational guides and materials, and the retraining of teachers involved in the experimental application of the innovations developed. Educational materials were used in a training workshop, in which 49 primary school teachers took part. The materials were later used on an experimental basis by educators in four community schools in the pilot area. Results of the pilot project are being incorporated into the primary level curricula of Guatemala's rural areas and a permanent unit dealing with EE has been established within the Ministry of Education.

This project was developed by the National Institute for Pedagogical Research of the French Ministry of Education. It aimed at the development of methodological innovations in environmental education, specially the formulation of educational objectives and experimentation of various teaching/learning approaches for secondary-school students.

The main results of the project have been the development of teaching/learning models of an interdisciplinary nature, specially adapted to the treatment of environmental issues, subsequently applied in 30 French secondary schools. These models were elaborated through four training workshops in which about 40 teachers, 8 educational researchers and 28 environmental specialists participated.

The project has resulted in the formulation of a ministerial statement recommending the development of EE within the national educational system, as well as in the establishment of an agreement between the Ministries of Education and Environment for the advancement of this education.

4. Pilot Project for Primary Schools in Marginal Urban Settlements, Peru (1977-1979):
This pilot project was developed by the General Direction of Regular and Special Basic Education of the Ministry of Education of Peru. The project aimed at elaboration of experimental EE materials and associated training for teachers in charge of their application at the primary school level in an urban marginal area near the capital. The central thematic
concerns were: prevention of the deterioration of air, water and soil, the improvement of health and hygienic conditions, and improvement of social and cultural relationships in the experimental area. The project developed a series of educational materials. The project also organized a seminar on the use of interdisciplinary approaches in the training of EE instructors and teachers. The pilot project's pedagogical results have been incorporated into curricula for primary and secondary education within the Peruvian school system.

5. Pilot Project for Primary and Secondary Schools, Peru (1979-1981): This project was developed under the responsibility of the Regional Seismology Centre for South America with the collaboration of the Peruvian Ministry of Education. The main results were preparation of educational multimedia materials on earthquakes for the training and retraining of primary and secondary schools, and the education of students at various levels of formal education. The project also envisaged the diffusion of earthquake-related information for the general public.

6. Pilot Project for the General Public, Mongolia (1978-1979): This project was undertaken in various regions of the country by the State Committee Board of Ministries for Science and Technology of Mongolia. Its objective was development of EE programmes to provide basic knowledge and develop appropriate attitudes for the general public and specific social groups. The project developed a series of instructional aids, including programmes for radio and TV, and an ecumuseum. EE modules were also prepared for the adult population of rural and urban settlements concerning environmental preservation and transportation, mineral resources and their use, values and environment, medicinal plants and their utilization. The project has also produced 18 sets of slides and film strips on conservation of wildlife, as well as 80 radio and TV programmes and 80 special press articles which were diffused throughout the country. The project has had an impact on some 160,000 people and has constituted a nucleus for the further development of EE nationally.

7. Pilot Project for Primary School and General Public, Jordan (1978-1980): This project was under the responsibility of the National Commission for Unesco within the Ministry of Education of Jordan. The institutional framework was constituted by an intersectoral team representing the Ministries of Health and Agriculture, the Faculty of Agriculture of the University of Jordan and
the local administration of the Jordan Valley. The objective of the project was the development of awareness of the Loren Valley population about problems of water pollution and its purification. A complementary objective was to encourage participation of school and community members in the solution of environmental problems presented in daily life.

The project developed an educational module on water pollution, oriented to teachers and students of the pilot area. Before its experimental application by primary schools of the area, an interdisciplinary workshop was organized assembling EE specialists and teachers. A publication of a more general nature oriented to the out-of-school population was also prepared.

8. Pilot Project for Secondary Schools and General Public, Ukrainian SSR (1977-1979): This project was undertaken by the Faculty of Natural Sciences and Geography of the Pedagogic Institute of Kiev in collaboration with the Institute of Pedagogical Research of the Ukrainian SSR. Its objectives were to develop basic environmental knowledge for secondary-school students in order to improve their comprehension of environmental problems and to encourage active participation in their prevention and solution.

The project developed a series of educational materials related to such environmental aspects as the conservation of water, air, soil, flora and fauna. Workshops were organized for the retraining of teachers and the incorporation of the environmental dimension into regular educational programmes at the secondary level. A major result of the project consisted in definition of mechanisms for the infusion of EE into general education in rural and urban areas. These mechanisms involved EE actions, research activities, interpretation, field trips, and more conventional pedagogical approaches, such as lectures and classroom courses.

9. Pilot Project of An Environmental Education Network for Secondary Schools, INTERNET, United States of America (1977-1978): This project was carried out by the International Environment Resources Network (INTERNET) of the Centre for Natural Areas, an affiliate of the Smithsonian Institution of Washington, D.C. The objective was to promote environmental awareness through the dissemination of information on environmental events, principally natural events, man-caused events, environmental quality and environmental management. The most important outcome was the publication of a directory of local environmental resources, relevant organizations working in the field and the involved schools of the U.S.A. and Canada. Another project result was
development of information on environmental issues and programmes disseminated to Internet participants in the form of 2-page "Internet Environment Reports". The reports, of which 103 were published in 1977, cover a wide range of environmental issues at world, regional, national and local levels. The last achievement was development of a teacher's guide, aimed at suggesting ways of utilizing Internet materials in and out of the classroom and providing teachers and students with selected background documents on national and international efforts in environmental management and education.

10. **Pilot Project for Primary Level Teachers, SEPA, Africa (1977-1980):** This project was developed by the Science Education Programme for Africa (SEPA). It aimed at producing multimedia educational materials for first cycle teachers related to environmental problems of Sub-Saharan Africa. The project has developed two packages, one concerning problems of water utilization, including a teacher's guide and associated films and film strips, the other related to food production, similarly including a curriculum guide and audio-visual aids.

11. **Pilot Project for Teacher and Educational Specialists, United Kingdom (1977-1978):** This project was carried out by the Town and Country Planning Association of London. Its objective was to provide European educators with up-to-date information concerning urban environment programmes in their area. The Association organized two courses in London (1977) on urban environmental education. The main aim of these courses was to bridge the gap between those involved in urban planning and design and those involved in teaching these subjects at secondary level teacher training.

12. **Pilot Project for Primary Schools, Afghanistan (1977-1980):** This project was contracted by the National Centre of the Ministry of Education of Afghanistan. The main objective of the project was to enable 7th graders in certain schools from the provinces of Kabul, Nengarhar, Takha, Herat, Kandahar and Ghazni to better understand the interrelationship of people and their immediate environment and to develop behaviour favouring the environment. The project developed teaching/learning modules dealing with the conservation of natural resources, safe drinking water and environmental health. The
13. **Pilot Project for Primary School and General Public, Indonesia (1977-1980):**
This project was implemented by the MAB (Man and Biosphere) Committee of Indonesia with the cooperation of the Office for Education and Cultural Research Development, the Municipal Government of Jakarta and the Jakarta Institute of Teacher Training and Education. The main activities were the development of a series of EE modules on different environmental problems for students and teachers, the training of a group of teachers on the experimental use of the modules in selected primary schools. As a continuation, a new EE pilot project for junior high schools is being considered by Indonesian educational authorities.

14. **Pilot Project for Primary Schools, India (1979-1980):**
This project was developed by the National Council of Education Research (NCERT) of India. The project's main objective was preparation and experimentation implementation of EE modules in primary schools of several Indian States, namely Assam, Punjab, Karnataka and Tamil Nadu. In this connection the pilot project organized workshops for teachers of the areas involved. During these workshops, teachers and specialists refined the modules prepared and provided appropriate guidelines for their use. The modules are being implemented and evaluated on a national scale.

15. **Pilot Project for Youth Associations and Clubs, Egypt (1978-1981):**
This project was conducted by the Egyptian National Commission for Unesco. Its main objectives were to increase youth awareness about national environmental problems and favour an effective contribution of the young in a country-wide programme of environmental education and preservation. Actions involved development of educational modules and training of youth leaders.

This project has been carried out by the Pedagogical Research Institute of Czechoslovakia. Its main objective is development of a comprehensive EE programme embracing all levels of school education: (a) pre-school and lower primary school; (b) upper primary school; and (c) secondary school.
Pilot Project for Secondary School, Kenya (1978-1981): This project was conducted under the joint responsibility of the National Commission for Unesco, the Kenya Institute of Education and the Kiambu High School of Nairobi. The project developed an integrated experimental curriculum of environmental education at the secondary level, as well as the retraining of teachers to apply it within the Kiambu High School.

Pilot Project for Primary School Teachers and General Public, Costa Rica (1979-1981): This project, initiated under the responsibility of the Centre for the Improvement of Science Teaching within the framework of the Ministry of Education, aimed at development of pedagogical materials related to environmental problems of tropical rain zones, particularly energy production, nutrition and health practices. The materials constitute the basis for retraining primary-school teachers and address students as well as various socio-professional groups of the experimental area. Another result is the establishment of a specific unit within the Ministry of Education for the advancement of EE at national level.

Pilot Project on the Sahel Region, Senegal (1977-1982): This project was developed by Unesco's Regional Education Office for Africa in collaboration with the Director of the Environment at the Ministry of Urbanism of Senegal. The project produced a series of multimedia materials for the environmental education of the general public concerning environmental issues and problems of the Sahel region. The materials were tested in selected villages.

Pilot Project for Schools and General Public, Upper Volta (1980-1982): This project was carried out by the National Institute of Education of the Ministry of Education of Upper Volta and was devoted to the development of a comprehensive EE programme for school and out-of-school population concerning environmental problems related to desertification. Pilot activities have been extended to other regions within the country.

Pilot Project for Primary School Teachers and General Public, Dominican Republic (1979-1982): This project, related to meteorological disasters, was developed under the responsibility of the Environmental Education Programme of the Ministry of Agriculture of the Dominican Republic. The principal results include preparation of educational materials addressed to school teachers and the general public concerning social and environmental problems associated with cyclones. The project also prepared retraining programmes for personnel responsible for the experimental application of these materials. A department of EE has been established within the Ministry of Agriculture.
22. **Pilot Project for Formal Environmental Education, Cuba (1981-1983):** This project aimed at developing a national response to environmental problems through the training and retraining of teachers and the preparation of educational materials dealing with conservation of natural resources, purification of air and water and preservation of cultural heritage. The project also envisaged to create centres of environmental interest, bringing together people inside and outside the formal school system.

23. **Pilot Project on Environmental Problems of Urban Marginal Areas, India (1981-1983):** This project aimed at developing multimedia educational materials related to major environmental problems of marginal urban settlements (hygiene, nutrition, pollution and other aspects), the training of community leaders and the experimental development of actions oriented toward improvement of the environmental quality of the community concerned in India.

**TRAINING OF PERSONNEL IN ENVIRONMENTAL EDUCATION**

The Lbilini Conference stated that "the training of qualified personnel was considered to be a priority activity. This holds good for both initial and in-service training, for the purpose of familiarizing teachers in formal education, organizers in non-formal activities for young people and adults, administrative personnel and educational planners and researchers with environment-linked subject matter and educational and methodological guidelines". It was further emphasized that environmental sciences and EE should be included in curricula for pre-service teacher education, that Member States should take the necessary steps to make in-service training of teachers in EE available to all who need it and that education and training institutions should have the necessary flexibility to enable them to include appropriate aspects of EE within existing curricula and to create new environmental curricula which meet the requirements of an interdisciplinary approach and methodology.

Main activities of the IEEP in this field concern:
International Training Course in Environmental Education

The international training course in environmental education was organized on 1-28 September 1982 in Prague and other towns of the Czechoslovak Socialist Republic. The course was organized by the Institute of Applied Ecology and Ecotechnology of the University of Agriculture in Prague with the cooperation of the Pedagogical Faculty in Hradec Kralove, the College of Mining in Ostrava, the College of Forestry and Timber in Zvolen and the Charles University in Prague. The course was attended by experts from Afghanistan, Bangladesh, Colombia, Congo, Cuba, Ethiopia, Guyana, India, Indonesia, Mauritania, Pakistan, Senegal and Upper Volta as well as by observers from Czechoslovakia.

The objectives of the course were to (a) provide the participants with knowledge of recurrent environmental problems and the special problem of ecosocial development; (b) study the ways and means of incorporating environmental education as a problem-oriented education into disciplines at all school levels; and (c) acquaint participants with different types of pedagogical materials and teaching support and other audio-visual materials including films of formal and nonformal environmental education. (A final report has been published. Lecture materials for the course will be published).

Regional Training Workshops in Environmental Education

1. Regional Training Workshop for Africa. This training workshop for key educational personnel for the development of environmental education through the formal education process was organized December 1978 in Dakar, Senegal. The workshop was attended by 21 participants from Benin, Cameroon, Cape Verde, Central African Republic, Comoros, Djibouti, Guinea, Guinea-Bissau, Kenya, Mauritania, Mauritius, Niger, Senegal, Sierra Leone, Chad, Togo, Uganda, Upper Volta, Zaire and Zambia, and seven observers from UNEP, NEA, and national institutions of Senegal.

The workshop focused on the goals, objectives and guiding principles of EE, strategies for programme formulation, curriculum development and pre-service and in-service teacher training in EE. (The final report has been published).
2. **Regional Training Workshop for Latin America.** This workshop was organized on 29 October to 7 November 1979 in San Jose, Costa Rica. There were 22 participants from Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, the Dominican Republic, Uruguay and Venezuela as well as 10 observers from Costa Rica, Guatemala and Venezuela.

The workshop focused on the identification and formulation of ways and means for planning development policies for EE; strategies for incorporating an environmental dimension into the training of teachers and into the curricula and didactic materials for primary and secondary schools. (The final report has been published in English and Spanish).

3. **Regional Training Workshop for Asia.** This training workshop for Asia and Oceania was organized September 1980 in Bangkok, Thailand. The workshop was attended by 19 participants from Afghanistan, Australia, Bangladesh, China, India, Indonesia, Iran, Japan, Malaysia, Nepal, New Zealand, the Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand and the USSR as well as 12 observers from international governmental organizations.

The workshop reviewed EE progress in the region and established concrete steps that may be taken to enhance environmental education for both in-school and out-of-school populations. Seventeen country reports were presented and discussed. These reports were published in the Unesco Regional Education Office for Asia and Oceania, Bulletin No. 22, June 1981. (A final report was also published).

4. **Regional Training Workshop for the Arab States.** This workshop was organized May 1981 in Manama, Bahrain. There were 21 participants from Algeria, Bahrain, Egypt, Kuwait, Morocco, Saudi Arabia, Somalia, Syria, United Arab Emirates and the P.L.O.

The workshop focused on EE concepts, strategies and methods, anthropological ecology, the Arab environment and how to preserve its equilibrium. Five working documents on the above topics and those on strategies for curriculum development and teacher training in EE prepared by IEEP were used in the workshop. Similarly, ten country reports were presented and discussed. (A final report has been published).
5. **Regional Training Workshop for Europe.** This workshop was organized December 1980 in Essen, Federal Republic of Germany. There were 40 participants from Austria, Bulgaria, Canada, Czechoslovakia, Denmark, Finland, Federal Republic of Germany, Hungary, Ireland, Israel, Italy, Malta, the Netherlands, Norway, Poland, Spain, Sweden, Switzerland, UK, USA as well as observers from the Commission of the European Communities and IUCN.

The workshop focused on the review of trends and prospects, including the development of national mechanisms in EE in Europe since the Tbilisi Conference; development of EE in primary and secondary schools, curriculum development and teacher training; EE in technical and vocational schools; EE in adult education and information of the general public with regard to environmental issues; promotion of regional cooperation in EE. Nineteen country reports were presented which have been published in English. (A final report has also been published).

**Subregional Training Workshops**

1. **Subregional Training Workshop for the Caribbean.** This workshop was organized June 1980 in Antigua. There were 19 participants from Antigua, Barbados, Dominica, Grenada, Guyana, Jamaica, St. Lucia, St. Vincent, Suriname and Trinidad-Tobago.

The workshop focused on developing strategies for curriculum development and teacher training for primary and secondary schools and teacher training institutions in EE and fostering exchange of information and experiences. Ten country reports were presented. (A final report has been published in English and Spanish).

2. **Subregional Training Workshop in Europe.** This workshop was organized October 1980 in Prague and Hluboka, Czechoslovakia. The workshop was attended by 25 teacher educators from Bulgaria, Czechoslovakia, Finland, France, German Democratic Republic, Federal Republic of Germany, Hungary, Poland and the USSR.

The main objective of the workshop was to exchange experiences and study the ways and means for incorporating EE into pre-service and in-service teacher training programmes for primary and secondary schools. (A final report has been published).
3. **Subregional Workshop on Teacher Training in EE for Asia.** This workshop for Asia was organized in March 1983 in New Delhi, India. The workshop was attended by 25 teacher educators from Afghanistan, Bangladesh, Sri Lanka and India.

The objectives of the workshop were to familiarize teacher educators with the contents of the series of EE teacher training modules prepared by the International EE Programme (see pages 31-32 for titles of the modules); explore ways for their local adaptation and use, etc.; and exchange information and experience on EE material development in the subregion. (A final report has been published).

4. **Subregional Workshop on Teacher Training in EE for the Caribbean.** This workshop was organized in July 1983 in Mona, Jamaica. The workshop was attended by 9 teacher educators from the Bahamas, Barbados, Belize, Dominica, Grenada, Jamaica, St. Lucia, St. Vincent and Trinidad-Tobago as well as by 7 observers.

The objectives of the workshop were similar to those of the preceding Asian workshop. (A final report has been published).

**National Training Workshops**

A. **Africa**

1. **Upper Volta:** A national EE training workshop was organized December 1979 in Ouagadougou. Seventy science and geography secondary school teachers and administrators participated. The objective of the workshop was to explore ways for incorporating environmental concepts into secondary school subjects. (A final report has been published).

2. **Central African Republic:** This national training workshop was organized November 1980. Fifty participants, including directors of educational institutions, primary education supervisors, advisers and senior student teachers, took part.

3. **Sierra Leone:** This workshop was organized December 1981 with the participation of 60 in-service and student teachers and community leaders from twenty pilot school centres. The objectives were to familiarize participants with the environmental problems of Sierra Leone and to integrate environmental concepts into the primary school curriculum and its teacher training programmes.
4. **Benin:** This workshop was organized September 1982 for 161 participants. Objectives were to analyze primary school curriculum, accommodate appropriate EE concepts and identify teaching methodologies for their implementation. (A final report has been published).

5. **Rwanda:** This workshop was organized 24 August - 4 September 1982 in Kigali. Forty-two participants from the Ministries of Primary and Secondary Education, of Higher Education and Scientific Research took part. The objectives were to sensitize participants to issues and problems of the environment, to study ways for accommodating environmental problems of Rwanda into teaching/learning processes of its educational system, etc. (A final report has been published in French).

6. **Senegal:** This workshop was organized for 50 teachers and 10 key professionals of national parks for the effective use of an adapted version of the publication titled *African Heritage* in formal and nonformal education. The objective of the training workshop was to sensitize the school and out-of-school population to conservation of natural resources, especially national parks.

7. **Malawi:** This EE training workshop was organized April 1983. There were 77 participants, drawn from those involved in formal and nonformal education, various ministries and industries involved in the exploitation or preservation of Malawi's natural resources. (A final report has been published).

8. **Ethiopia:** This EE training workshop was organized August 1983 in Addis Ababa. There were 67 participants from the Ministries of Education, Agriculture, Public Health, Labour and Social Affairs, and State Farms, Crop Pest Control Division, Colleges of Teacher Education, All Ethiopia Trade Union Association, Asmara University, etc. The principal goal was to elaborate strategies for the promotion of EE in Ethiopia.

9. **Guinea-Bissau:** This national training workshop is envisaged for late 1983. There will be 50 participants.

10. **Ivory Coast:** This workshop for 30 specialists in the field of the environment and educational education is envisaged for the end of 1983.

11. **Zaire:** This workshop for 50 teacher educators and curriculum developers is envisaged for early 1984.
8. Arab States

1. Egypt: This EE training workshop was organized August 1982 for 70 natural science supervisors and inspectors. The theme of the workshop was ways and means for incorporating EE into the pre-service and in-service training of teachers and to develop programmes and curricula in this area. (A case study entitled "The Egyptian Experience in Formal Environmental Education", based on the workshop, has been published).

2. Sudan: A national training course titled "Planning for Environmental Education in the Sudan" has been prepared for late 1983 in Khartoum. There will be 44 participants from research centres, education centres, training institutes, etc. and three persons from each of the eight provinces of Sudan.

3. Tunisia: A training workshop is under preparation for late 1983 in Tunis. The workshop will be attended by 34 university professors, administrators, researchers from the Ministry of Agriculture, directors and inspectors of secondary schools, agricultural and technical schools, teacher educators, primary school directors and teachers.

4. Morocco: A training workshop is being prepared for late 1983 in Rabat. It is to be attended by 40 participants, consisting of 32 natural science supervisors, 5 social science supervisors and 3 members of the Department of Population Education.

5. Oman: A workshop is under preparation for late 1983 in Muscat.


C. Asia and the Pacific

1. The Philippines: A national EE training workshop was organized March 1979. There were 30 participants from the regional offices of the Ministry of Education and Culture, regional science teaching centres, regional staff development centres and the two high schools in the Metro Manila area. (The organizers have prepared a case study based on the workshop).
2. Korea: This training workshop was organized December 1979 in Seoul. There were 64 participants from various government agencies, graduate environmental schools, provincial boards of education, primary and secondary schools, teacher training and research institutes, and press and broadcasting. A case study based on the workshop has been prepared.

3. Bangladesh: This training workshop in non-formal EE was organized February 1981 in Dacca for 50 representatives from Unesco Clubs, Boy Scouts, Girl Guides, youth organizations, women's associations and social welfare organizations in Bangladesh.

4. All-China Training Workshop on Environmental Education: This workshop was organized April 1982 with these objectives: to increase awareness and knowledge of the participants about the environment and its problems and the relationship between development and environment; to raise sensitivity to changes in environmental quality and improve a sense of responsibility for protecting and improving the environment; to acquaint participants with EE goals, objectives, principles and teaching methodologies in order to further environmental education in China. Participants were 51 professionals from middle and primary schools and kindergartens of 23 provinces, municipalities and autonomous regions throughout the country, teachers and administrators from normal colleges and universities and polytechnical institutes as well as delegates from the Ministry of Education. (A final report has been published.)

5. Nepal: This workshop was organized in 1982. The thirty participants were school supervisors, teacher educators and curriculum experts.

6. Sri Lanka: The first phase of a national EE training workshop on EE was organized October 1982, the remaining phase in early 1983. Forty-two participants took part in the first phase. The second phase involved preparation of multimedia EE packages employed in various field centres of Sri Lanka.

D. Europe

1. Bulgaria: A national EE training course was held June 1979 in Sofia. There were 230 participants from the Ministry of People's Education, the Central Institute for Training of Teaching Personnel, the Environ-
ment Protection Committee, the National Committee on Environmental Protection, the National Council of the Fatherland Front Organization, the Nature Research Association, the Research Institute on Education, the Higher Forestry Institute and the Commission on the Protection of the Environment. (A final report has been published.)

2. Poland: This training workshop was organized September 1980 on strategies for environmental education in the general 10-year compulsory school. About 60 inspectors in biology and geography, representatives of interested ministries and teachers of relevant subjects took part. (A final report has been published.)

3. Ukrainian SSR: This workshop was organized April 1981 in Kiev. The 51 participants consisted of teachers from senior secondary schools, methodologists and workers of city and district youth naturalist stations.

4. Hungary: A national EE training workshop was organized December 1981 in Salgotarjan. There were 200 participants consisting of teachers from secondary, grammar and vocational schools; there were also skilled worker training school teachers. A case study has been prepared based on the workshop.

5. Byelorussian SSR: This workshop was organized September 1982 in Minsk for 55 participants. A case study has been prepared in Russian based on the workshop.

6. Yugoslavia: This workshop was organized September 1983. Participants included 150 scientists and educators from social organizations for the protection of the human environment (federal and republican), from republication and provincial secretariats of education, universities, faculties, academies of sciences, professional associations, pedagogical institutions and institutions for the promotion of education, teachers, etc. A case study based on the workshop is being prepared.
USSR: A training workshop has been under preparation by the USSR Commission for Unesco since June 1982 for 1984. About 30 participants are expected to take part.

Latin America and the Caribbean

1. Brazil: A national EE training workshop was organized March 1979 in Sao Paulo. Twenty-one participants, mainly educators in physics, chemistry, biology, geography, mathematics and history at the secondary level, took part. Objectives included development of a teaching module and a teacher's guide in environmental education. A publication entitled "Environmental Problems in Highly Urbanized Zones" contains the teaching module and the teacher's guide as well as a short glossary of terms. A set of 12 cards to be used by students for simulation purposes was also produced.

2. Chile: A national seminar on "Ecological Aspects of Education - An Interdisciplinary Approach" was held in August 1979 in Valdivia. There were 77 participants from universities, teacher training institutions and the Ministry of Education. The five working documents have been published in Spanish (as well as a final report).

3. Cuba: A national EE training seminar was convened March 1979 in Havana. There were 39 participants from the Ministries of Education and Culture, the Academy of Sciences, institutions of higher education, provincial educational institutions, the Cuban Pioneers' Organization, etc. (A final report has been published.)

4. Argentina: A national training course was organized June 1980 in Buenos Aires for 50 participants involved in teacher education, curriculum development, supervision and environmental planning. (A final report has been published.)

5. Ecuador: A training workshop was organized in Quito November 1982. The 50 participants were national supervisors, educational planners, teacher educators, provincial directors of education, university professors, and professionals from the national project of literacy and rural education. A case study based on the workshop has been published.
6. **Jamaica**: A training workshop was organized March 1981 in Kingston. There were 38 curriculum developers, teacher educators and education officers from the primary, secondary and technical schools, School of Drama, Science Centre, School of Education of the University of West Indies, Community College and the College of Arts, Science and Technology. (A final report has been published in English.)

7. **Guyana**: This workshop was organized May 1981 in Georgetown. There were 42 participants. They prepared materials entitled "Learning about my environment". (A final report has been published in English.)
EDUCATIONAL MATERIALS AND PUBLICATIONS

This action involves the preparation, adaptation, production and diffusion of educational materials (manuals, guidebooks, modules, audiovisuals, etc.) as well as publications concerning various levels and forms of environmental education and training.

Publications of the IEEP

1. Environmental Education in the Light of the Tbilisi Conference, 1980: based upon, and including the Declaration and recommendations of, the Intergovernmental Conference on EE, held in Tbilisi, USSR, October 1977. Its chapters deal with the role of education in the face of environmental problems; EE goals and characteristics, strategies and modalities; and international cooperation.

2. Education and the Challenge of Environmental Problems, 1977: considers the theme of its title in five parts -- major environmental problems in contemporary society, the role of education confronting this challenge, strategies for the development of EE at national level and international and regional cooperation for EE development.

3. Needs and Priorities in Environmental Education -- An International Survey, 1977: based upon a detailed questionnaire to which Unesco Member States replied, also upon special reports of consultants sent on missions to 81 of these States, upon UN statistics and upon reports of regional EE meetings. The report analyzes needs and trends at world and regional levels, and EE problems and priorities at national level.

4. Trends in Environmental Education since the Tbilisi Conference, 1983: on the basis of results of an international survey conducted by Unesco, this document presents progress in environmental education since 1977 as well as needs and priorities related to its future development.

5. Environmental Education in Asia and the Pacific, theme-title of the
annual Bulletin of the UNESCO Regional Office for Education in Asia and the Pacific, June 1981: This issue, in English only, contains 324 pages plus a 61-page bibliography, all devoted to the subject of EE in Asia and the Pacific, consisting of an overview of the regional situation, 18 country reports and nine special articles on selected EE aspects of the region.

6. Trends in Environmental Education, 1977: a collection of fourteen studies of trends in EE, worldwide, written by authors from every region of the world. It covers all levels and forms of general environmental education both inside and outside the school system, as well as EE philosophy, methodologies, materials, legislation, evaluation, etc.

7. EE Glossary: terms related to environmental education, prepared in Russian and English, through contract, by the USSR Academy of Science.

8. Humanity and the Environment, A Sourcebook in Environmental Education: The sourcebook's objectives are to provide curriculum developers, teacher educators and teachers with the orientation and content for incorporating the environmental dimension into general primary and secondary education and related teacher training. The sourcebook has been prepared, through contract, by the National Institute for Economic Management and Academy of Sciences of the Ukrainian SSR, and will be published in 1984.

9. Sourcebook in Non-formal Environmental Education: the preparation of this sourcebook has been initiated in collaboration with Charles University in Czechoslovakia, University Pertanian Malaysia, University of Wisconsin/Stevens Point, and the Rene Dubos Center for Human Environment. The basic theme of the sourcebook is people's relationship with the environment, their dependency on it, their role in conserving and improving the environment and its quality. The target group of the sourcebook is the key personnel in rural development, the mass media, health and sanitation, conservation, tourism, industry, politics and planning who have the possibilities to convey environmental education information and experience to the general public in the domain of their activities. (To be published in 1985.)

10. Prototype Modules for Formal Education: locally and regionally adaptable prototype educational modules for teachers and students are being
These modules relate to various aspects and problems of the environment and can be used either as separate units or as an integrated education programme:

(i) Educational module on use and management of natural resources, 1983: includes themes such as people and their environment, earth products, water and water resources, energy resources, habitable and consumption, soil and space, cultural and natural heritages.

(ii) Educational module on environmental problems in cities, 1983: includes sub-themes, such as urban ecosystems, city growth, transportation, water quality, soil wastes, city noise, nature and the city, and social environment and the city.

(iii) Educational module on health, nutrition and the environment: includes sub-themes, such as man and illness, nutrition and environment, health and life styles, nutrition and life styles, health, nutrition and economic development, etc. (To be printed in 1984.)

(iv) Educational module on environmental problems related to desertification: includes sub-themes, such as man and water, man and soil, man and vegetables, man and animal life, man and energy. (To be printed in 1984.)

(v) Educational module on energy and the environment: deals with basic concepts and concerns such as energy, energy sources, alternative forms of energy production (solar, water, wind, biomass), environmental impact of energy applications in industrial and agricultural production, conservation of energy in daily urban or rural life. The handbook also contains a series of practical lessons for primary and secondary school education on topics related to energy and the environment. (To be published in 1984.)

11. Teacher-Training Modules in Environmental Education: The following teacher-training modules have been prepared:

(i) Module for pre-service EE training of primary school teachers and supervisors, 1983
(ii) Module for pre-service EE training of secondary science teachers and supervisors

(iii) Module for in-service EE training of secondary science teachers

(iv) Module for in-service training of secondary school social science teachers and supervisors

(v) Module for in-service training of primary school teachers and supervisors

(vi) Module for pre-service training of secondary social science teachers and supervisors

12. Audio-Visual Packages for Non-Formal EE in Rural Settings: addressed to educators and the general public with the aim of providing them with the scientific and technological knowledge for coping with environmental problems in their daily life. The package consists of slides, tapes and printed materials concerning problems such as conservation and use of water and soils, food production, nutrition and health principles and practices, disaster preparedness, etc. (To be published in 1984.)

13. Nutrition, Health and Environment: An EE Approach for Latin America: adapted to the environmental, cultural and socio-economic characteristics of the Latin American region and addressed to secondary school teachers and pupils. It deals with such themes as nutritional principles, food and diet, food and geography, food and the natural environment, food and culture, the social distribution of food, food and economic development and regional food policies. (To be published in 1984.)

14. Life Balance, 1983: indicates the physical, chemical, biological and social dimensions of the human environment as well as the interactions of its components and offers an integrated conceptual framework for the implementation of environmental education.

15. Teacher's Guide: titled "Environmental Education: Teaching/Learning Guidelines", this has been designed to familiarize primary and secondary school teachers with the problem of incorporating EE into contemporary educational systems. A first draft has been prepared by the National Pedagogical Research Institute of France; a revision has
been undertaken, through contract, by the Environmental Education Laboratory of Geneva University, Switzerland. (Publication is scheduled for 1984.)

16. **Guides on Environmental Education Methodologies**: these guides analyse relevant experiences in the incorporation of EE into formal and non-formal educational processes. Their objective is to provide teachers with concrete approaches for their educational practices in this field.

(i) **Guide on the utilization of modular approaches in environmental education**, 1983: describes the notion of modules and the advantage of their use in incorporating the environmental dimension into regional education programmes. It also proposes a series of specific modular examples applied in different school settings and relating to environmental concerns, such as water conservation, urban environment, health and nutrition.

(ii) **Guide on the use of simulation and gaming in environmental education**, 1983: describes the fundamentals of gaming and simulation, proposes guidelines for the creation of original games by curriculum developers and provides a series of model games related to environmental concerns, such as conservation of natural resources, anti-pollution measures, urban problems, health and nutrition, and disaster preparedness.

(iii) **Guide on EE evaluation**: devoted to developing approaches, methods and instruments for evaluating interdisciplinary and problem-oriented EE programmes. The guide develops fundamentals of evaluation and selected examples, including methods and means of evaluation applicable by teachers. (To be published in 1984.)

(iv) **Guide on environmental value education**: reviews the principal theories of value-formation, developing an integrative approach to the teaching of environmental values and providing practical exercises for primary and secondary school education. (To be published in 1984.)

(v) **Guide on the integration of an environmental dimension into social studies in school**: identifies possible contents for integration to
social sciences in school (geography, history, economics, sociology, civic, etc.) and proposes suitable methods for their pedagogic treatment. (To be published in 1984.)

(vi) Guide on the integration of an environmental dimension into arts education: specifies the contributions of arts education to the preservation of natural and built environments, and suggests objectives, content and pedagogical approaches for environmentally oriented arts education activities in primary and secondary school education. (To be published in 1984.)

(vii) Guide on pedagogic problem-solving approaches for EE, 1983: reviews principal problem-solving approaches and methods, indicating their practical application in non-formal environmental education activities. Principal subjects considered are: team discussion, simulation and gaming, value clarification and action projects.

(viii) Strategies for developing an EE curriculum: Discussion guide for training workshops in environmental education: describes the philosophy, goals, objectives and guiding principles of environmental education in the light of the Tbilisi Conference and establishes guidelines for curriculum development in schools, communities, regions and nations (1980).

(ix) Suggestions for developing a national strategy for environmental education - A planning and management process: Discussion guide for training workshops in EE: presents possible strategies for the development, management, implementation, evaluation and revision of a national EE plan in the context of the physical, socio-cultural, economic and political situation of a country (1980).

(x) Strategies for the training of teachers in environmental education: Discussion guide for training workshops in EE: assists interested persons and institutions to develop strategies for incorporating EE into content and teaching methods of pre- and in-service teacher training programmes (1980).
The interdisciplinary approach in EE: A guide for curriculum developers, 1983: considers methods and practical questions related to the application of interdisciplinary approaches in EE. Among its principal themes are the concept of interdisciplinarity, strategies for its incorporation into environmental education practice and research problems concerning interdisciplinary EE.

17. Multimedia Strategies for Communicating Environmental Messages in Latin America: constitutes a case study on the experience of broadcast-schools developed by Radio Zutatenza in Colombia and intended for agriculturalists. Educational programmes deal with such themes as food production, conservation of natural resources, health and nutrition, etc. Various media -- radio, recordings, leaflets, etc. -- are used in the programme exercises. (To be published in 1984.)

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