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**ASEAN ENVIRONMENT PROGRAMME III
(ASEP III), 1988 - 1992**

PHASE III
OF THE REGIONAL COLLABORATIVE PROGRAMME
ON ENVIRONMENT OF THE ASEAN COUNTRIES



Prepared by
The ASEAN Experts Group on the Environment
in collaboration with
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Preface

The ASEAN Experts Group on the Environment prepared the ASEAN Environment Programme III (1988-1992) with the assistance of the United Nations Environment Programme Regional Office for Asia and the Pacific and the Bureau of Science and Technology of the ASEAN Secretariat.

This document has been circulated to all ASEAN member countries, considered and endorsed by the Tenth Meeting of the ASEAN Experts Group on the Environment, and adopted by the Third ASEAN Ministerial Meeting on the Environment.

I. BACKGROUND AND REVIEW

The year 1987 marks the end of two decades of cooperation among the members of the Association of Southeast Asian Nations (ASEAN) which was established when the ASEAN Declaration was signed in Bangkok on 8 August 1967. It also marks the beginning of a new era of cooperation with the holding of the Third Summit of the Heads of Governments of ASEAN countries in Manila in December 1987.

In the field of the environment, the year 1987 marks the end of the first decade of ASEAN cooperation as formulated in the ASEAN Environment Programme I (1978-1982) and the ASEAN Environment Programme II (1983-1987). It also marks the start of the implementation of the ASEAN Environment Programme III (1988-1992) which is designed to provide a firm base for the launching of a new era of cooperation into the 1990s and the next century.

ASEAN cooperation in the environment field was initiated in 1977 when the draft ASEAN Sub-Regional Environment Programme (ASEP I) was prepared with the assistance of the United Nations Environment Programme (UNEP). The ASEAN Committee on Science and Technology (ASEAN COST) recommended that a meeting of ASEAN experts on the environment be convened to consider the proposed Programme. Consequently, the First Meeting of the ASEAN Experts Group on the Environment (AEGE) was held in Jakarta on 18-20 December 1978 to consider ASEP I. Since then, the AEGE has met regularly each year and has become a permanent body under the purview of ASEAN COST.

ASEP I identified six priority programme areas for cooperation, namely, Environmental Management Including Environmental Impact Assessment, Nature Conservation and Terrestrial Ecosystem, Industry

and Environment, Marine Environment, Environmental Education and Training, and Environmental Information. It established eight goals within the six programme areas and emphasized the identification of common activities which would benefit ASEAN; the assessment of the environmental situation and the existing institutional capabilities in ASEAN; and the holding of meetings and workshops to discuss technical and policy issues on environment and to learn about the national activities of each member country.

The First ASEAN Ministerial Meeting on the Environment held in Manila on 30 April 1981 endorsed ASEP I and adopted the following objective and policy guidelines on the ASEAN environment:

Objective

To ensure the protection of the ASEAN environment and the sustainability of its natural resources so that it can sustain continued development with the aim of eradicating poverty and attaining the highest possible quality of life for the people of the ASEAN countries.

Policy Guidelines

Foster a common awareness among the people of the ASEAN countries of the biological, physical and social environment and its vital significance for sustained development to proceed apace;

Ensure, as far as practicable, that environmental considerations are taken into account in development efforts, both on-going and future;

Encourage the enactment and enforcement of environmental protection measures in the ASEAN countries; and

Foster the development of environmental education programmes.

In the context of the restructuring of ASEAN, the meeting also recommended the establishment of an ASEAN Committee on Environment.

The ASEAN Environment Programme II (ASEP II) retained the six programme areas of ASEP I and added another, namely, Remote Sensing. Thirteen goals were established within the seven programme areas: five new ones, two revised from ASEP I, and six goals remaining unchanged. Emphasis was given to the promotion of demonstration projects to solve immediate regional needs, the formulation of action plans and programmes for all the priority areas, and the strengthening of regional collaboration.

The Second ASEAN Ministerial Meeting on the Environment held in Bangkok on 29 November 1984, adopted ASEP II and noted with satisfaction the progress of the implementation of projects under the ASEAN Environment Programme. The Meeting also adopted the new objective on the ASEAN environment as follows:

To implement the ASEAN Development Strategy through an integrated approach entailing advance or forward planning in the environmentally related activities with a view to incorporating environmental dimension in development planning right at the base level in order to achieve sustained development and long-term conservation of environmental assets and at the same time improving the quality of life for all.

Detailed policy guidelines outlining the specific steps to be taken by ASEAN member countries with respect to environmental management, nature conservation, marine environment, industry, urban environment, environmental education and training, environmental information systems, wider involvement in environmental management, environmental legislation, and international cooperation on environmental management were also adopted.

To achieve the objective of ASEP II, various projects were implemented and numerous proposals were developed within the seven priority programme areas. These are reviewed briefly here.

Environmental Management Including EIA

One of the most significant developments in ASEAN during the past decade was in the field of environmental management. During this period, the value of environmental impact assessment was recognized and the EIA system became an integral part of the planning and evaluation of major development projects. In Indonesia, EIA studies were conducted on the Saguling Hydro-Electric Power Plant and the Kujang Fertilizer Plant Projects; in Thailand, a comprehensive environmental impact assessment was made on the Chiew Larn Multipurpose (Hydro-Electric Dam) Project; in Malaysia, on the Bintulu Regional Development; and in the Philippines, on the North Davao Mining Corporation Amacan Copper Project. These were among the case studies presented during the Workshop on Evaluation of Environmental Impact Assessment Applications in ASEAN Countries which was held in Bandung on 4-7 March 1984.

The importance that ASEP II gave to EIA is reflected in the number of project proposals developed since 1983 under this subject. In this regard, a number of project proposals in varying levels of development have been reported at the Ninth Meeting of the AECE in Singapore in April 1986. These include: Assessment of

Environmental Impacts of Coal-Based Electric Power Plants and Other Industries, approved by ASEAN COST and accepted by Australia for third party funding support; EIA of Mini-Hydro Plants, approved by ASEAN COST and awaiting third party funding support; Developing Environmental Guidelines for Development Planning, approved in principle by the AECE and ready for submission to ASEAN COST; EIA Training, a revised proposal is awaited by the AECE; and Information Dissemination on EIAs, all member countries are requested to submit articles on EIA for publication in ASEAN Newsletter. Most of these projects, particularly those in an advanced stage of development and awaiting third party funding support, will be carried over to ASEP III.

Substantial progress has also been achieved in two major activities under this priority programme area. With respect to the activity on the development of environmental planning methodologies suitable for ASEAN, Indonesia has continued to pursue the Watershed Development Project and during the Ninth Meeting of the AECE, Indonesia reported on the Sub-Watershed Kali Konto Experience. The Philippines has completed the ecological profiles of several selected provinces while a number are in varying stages of completion. Thailand has also completed its report on the Water Resources Development Planning for Rayong River Basin Project. However, Malaysia had to suspend work on the Sungai Linggi Water Resources and Water Quality Project due to manpower problem and has instead carried out a special study on water quality criteria and standards.

On the activity on Demonstration Projects on Environmentally-Sound Development, Indonesia is actively conducting a project on the Rehabilitation of Critical Land Areas. Malaysia has a project on Soil Erosion Control; the Philippines on Rehabilitation Strategies in Critically-Eroded Watersheds in Lemery, Batangas which is expected to be completed in 1987; and Thailand has completed a project on Appropriate Technology for Rural Development and has started to apply the technology to specific target groups.

Because of their importance to ASEAN and of the need to further integrate economic and environmental planning and development, demonstration projects on environmentally-sound development and the development of environmental planning methodologies suitable for ASEAN will continue to be pursued in ASEP III. Future efforts will be guided by the experience obtained during the past decade of ASEAN cooperation.

Nature Conservation

After that landmark ASEAN Declaration on Heritage Parks and Reserves in Bangkok on 29 November 1984, ASEAN cooperation in nature conservation reached another milestone with the approval of the ASEAN Agreement on the Conservation of Nature and Natural Resources at the Eighteenth ASEAN Ministerial Meeting in Kuala Lumpur in July 1985. Then at the Ninth Meeting of the AEGE, the recommendations of the Ad-Hoc Working Group on the Harmonization of the List of Endangered and Threatened Species of ASEAN Countries were adopted. This should pave the way for the ratification by each ASEAN government of the ASEAN Agreement on the Conservation of Nature and Natural Resources.

At the national level, conservation efforts have intensified over the last half decade. In the Philippines, a Task Force Pawikan has been created to conserve the dwindling population of economically important marine turtle species and marine turtle sanctuaries have been established in Taganak, Baguan, and Bancauan islands. The Philippine eagle conservation project has been launched to manage the remaining population of the Philippine eagle and its habitat. Marine sanctuaries have been established in sixteen areas, with the Sumilon Marine Park providing an excellent example for the genetic conservation of marine species. In Malaysia, 5.8% of the land in Peninsular Malaysia, 0.63% in Sarawak and 1.4% in Sabah have been set aside as national parks and wildlife reserves. Similar efforts are found in Thailand, Indonesia, and Brunei.

At the regional level, the ASEAN Meeting on Nature Conservation (formerly, ASEAN Experts on Nature Conservation) has met regularly to consider projects of regional interest. An ASEAN Workshop for Park Managers was held in Baluran, East Java, Indonesia on 26-29 October 1984. Working under the purview of the AEGE, the ASEAN Meeting on Nature Conservation has prepared and developed a number of project proposals. The Regional Project on Wildlife Resources Development and Utilization for the Rural People in South East Asia has been approved by the AEGE and the ASEAN COST while two project proposals are under consideration, namely, Protected Areas Training and Technical Assistance, and the Development of Master Plan for ASEAN Heritage Parks and Reserves.

The ASEAN Declaration on Heritage Parks and Reserves and the ASEAN Agreement on the Conservation of Nature and Natural Resources are outstanding achievements of ASEP I and ASEP II. But to ensure effective nature conservation, the multifarious roles of the forest ecosystem need to be recognized and forest conservation need to be integrated with wildlife conservation, agriculture, and rural development.

Industry and Environment

Although the goals of ASEP II under this programme area are spread out into three areas of concern, namely, the enhancement of regional capability in pollution control with emphasis on residue utilization, the establishment of adequate urban air and water quality monitoring and management systems, including the control of effluents from small and medium industries, and the establishment of proper management programmes for the control of hazardous substances, more emphasis was placed by ASEAN member countries on the upgrading of ASEAN capability on air pollution monitoring and control. This is apparent in the number of projects carried out and the number of project proposals prepared in this area.

Two projects have been completed, namely, a Training Course Cum Study Tour on Air Pollution Control and Monitoring which was held in Italy on 15 April to 7 June 1985 and an ASEAN-EEC Workshop/Seminar on Air Pollution Monitoring which was held in Bangkok on 17-26 June 1985.

The ASEAN member countries have also prepared and developed a number of project proposals in this field which are presently in varying levels of development. These include the ASEAN-EC Project on Urban Air Quality Monitoring and Management, which has been approved by ASEAN COST and accepted by the EC for possible third party funding support, and three projects which have been approved at the 15th Meeting of ASEAN COST in October 1986, namely, Application of Meteorological Data in Air Pollution Monitoring and Control in the ASEAN Region, Air Pollution Control and Management in Flue Gas Desulphurization and Denitrification, and Vehicle Exhaust Emission in the ASEAN Region.

In line with the goal of establishing management programmes for the control of hazardous substances, an ASEAN-UNEP-CDG Workshop on Developing Policies and Strategic Guidelines for Managing Hazardous Wastes was held in Singapore on 7-9 May 1986. An ASEAN project on the Study of the Management and Control of Hazardous Materials in the United States has also received favorable response from the United States for possible third party funding support.

Towards the latter part of ASEP II, there was a discernible shift in emphasis from small and medium scale industries to organo-industrial industries. The ASEAN-UNDP project on Technology Transfer in Organo-Industrial Pollution Control and Monitoring was completed with the holding of a meeting in Thailand on 3-4 October 1985 and a new ASEAN project on Technology Transfer in the Treatment of Effluents From Palm Oil and Rubber Industries has been approved for funding by the United Nations Development Programme (UNDP) under the Third Cycle.

Water quality monitoring and management was also given some attention. An ASEAN-Australia Regional Training Course in Water Quality Management in Tropical Regions was held in Thailand on 25 June - 10 July 1986.

As ASEAN countries continue to industrialize, the problem of industrial pollution will increasingly become more important. And as more industries are established outside of urban centers, following the programme on the regional dispersal of industries in most ASEAN countries, the problems of industrial pollution will increasingly become more distinct and separate from the problems of the urban environment. This aspect will be considered in ASEP III.

Marine Environment

Cooperation among the ASEAN countries in the field of marine science and marine environment is carried out through three distinct regional bodies, namely, the Coordinating Body on the Seas of East Asia (COBSEA), the ASEAN Experts Group on the Environment (AEGE), and the Working Group on Marine Science (WGMS). While the AEGE and the WGMS are official ASEAN bodies under the purview of the ASEAN Committee on Science and Technology (COST), COBSEA is not. It comes under the purview of the United Nations Environment Programme (UNEP).

COBSEA was established in December 1981 by the Government of Indonesia, Malaysia, the Philippines, Singapore, and Thailand to coordinate the Action Plan for the Protection and Development of the Marine and Coastal Areas of the East Asian Region. Through annual meetings of COBSEA (Bangkok, 3 April 1982; Yogyakarta, 25-26 March 1983; Genting Highlands, 5-6 April 1984; Manila 22-23 April 1985; Singapore, 25-26 April 1986) the progress of the Action Plan was reviewed.

On 8-12 December 1986, a meeting of experts on the East Asian Seas Action Plan was held in Bangkok to review the development and achievements of the East Asian Seas Action Plan. Among the projects reviewed were the following: Cooperative Research on Oil and Oil Dispersant Toxicity; Study on Coral Resources and the Effects of Pollutants and Other Destructive Factors on Coral Communities and Related Fisheries; Study of the Maritime Meteorological Phenomena and Oceanographic Features; Survey and Monitoring of Oil Pollution and Development of National Coordinating Mechanisms for the Management and Establishment of a Regional Data Exchange System; Assessment of Concentration Levels and Trends of Non-Oil Pollutants and Their Effects on the Marine Environment; and Implementation of a Technical and Scientific Support Programme for Oil Spill Contingency Planning.

On January 14-16, 1986, a UNEP-COBSEA Workshop on Cleaning Up of Urban Rivers was held in Singapore. A number of measures were recommended to solve short and long term urban river pollution problems in ASEAN countries.

Under the AEGE, two projects are on the pipeline, namely, the ASEAN-UNDP Project on the Development of Cooperative Action Plan for Oil Pollution Combat (South China Sea) and the ASEAN-UNDP Project on Environmental Guidelines for Coastal Zone Management. Both projects will be funded from the UNDP Fourth Cycle. A third project proposal has been approved by ASEAN COST for submission to UNDP, namely, the Integrated Island Ecosystems Development Approach in ASEAN Countries.

Environmental Education and Training

The Eighth Meeting of the AEGE held in Manila on 17-20 April 1985 noted that there had been no progress in the implementation of the ASEAN Action Plan on Environmental Education and Training and

noted that the Action Plan had not been the subject of any experts meeting in a manner similar to that on nature conservation. However, on 11-14 November 1985, a meeting of Experts on Environmental Education and Training and Public Awareness in the Asia-Pacific Region was held in Bangkok to formulate a list of recommendations for formal and informal education and training, and to prepare an Action Plan for Environmental Education and Training for the Asia-Pacific Region. The Ninth Meeting of the AEGE agreed that Thailand be the coordinator for the ASEAN Action Plan on Environmental Education and Training and requested Thailand to inform the other ASEAN countries regarding follow up actions.

In line with the Programme goal of promoting environmental education and training through the development of suitable national programmes at school, out-of-school and other levels, a Regional Programme for the Training of Trainers on Environmental Education in the ASEAN Region has been prepared by the AEGE. This Programme has been approved by the ASEAN COST and will receive third party funding support from the Fourth Inter-Country Programme Cycle of the UNDP.

As stated in ASEP II, education and training are continuing processes. Thus it will remain a priority programme area in ASEP III and beyond.

Environmental Information and Data

Majority of ASEAN member countries participate in UNEP's INFOTERRA Programme and in the activities of the International Register of Potentially Toxic Chemicals (IRPTC).

The ASEAN Environment Newsletter and the celebration of the World Environment Day in ASEAN countries are continuing activities that foster exchange of information and public awareness on issues related to the environment.

In support of the programme goal of increasing the awareness and broadening the knowledge base of the ASEAN people on environment, the AECE has prepared a project proposal on the Development of Communication Media and Materials for Enhancing Environmental Awareness in ASEAN. The Fifteenth Meeting of ASEAN COST has approved the proposal for submission to UNDP for funding support.

In ASEP III, education, training, and information will be integrated to make the programme more effective and the implementation more cohesive.

Remote Sensing

Although remote sensing has been added as a new priority area in ASEP II, there has not been much progress in regional cooperation in this area. However, an ASEAN proposal on Regional Technical Cooperation Programme for Improving Environmental Monitoring and Surveillance Through Remote Sensing has been prepared by the AECE and approved by ASEAN COST for possible funding by the UNDP.

Among the ASEAN countries, Thailand appears to be at the forefront in the use of remote sensing techniques for environmental planning and management. Being the location of the Landsat Satellite Ground Receiving Station, Thailand, through its National Research Council, serves as the focal point for distribution of Landsat satellite immageries to neighboring countries. Remote sensing techniques have been and are being used in the study and classification of land use patterns in the Eastern Seaboard and the Upper South Region of Thailand; in classifying forest cover types in the northern region; in studies on Chiangmai watershed management classification; in the monitoring of tailings from offshore mining activities in the southern region; and in the study of location and relocation of hilltribe settlements in northern Thailand.

Both Thailand and Indonesia have remote sensing projects supported by UNEP GRID (Global Resources Information Data Base). In Thailand, the UNEP GRID project is concerned with the analysis of environmental changes due to deforestation in Chiang Mai province. Digitized forest cover maps, as well as soils, geology, and political boundaries have been processed into polygons and now require rasterizing and verifying.

In Indonesia, UNEP GRID is concerned with the analysis of the environmental carrying capacity of selected outer islands, West Java, and possibly Sumatra. A GRID mission has been to Jakarta to identify problem area and national capabilities.

Since remote sensing is now widely recognized as a technological tool for planning and management, it will not be listed as a separate priority area but subsumed under environmental management.

ASEP I and II Projects Summary

The various activities under ASEP I and II and their current status are presented in tabulated form in Annex A. It shows that of a total of 101 activities and projects, 37 have been completed, 19 are on-going national or regional activities, 31 project proposals are in various levels of development, and only 14 projects have not been implemented. Thirty-two projects in ASEP II will be carried over to ASEP III.

As envisaged in ASEP II, a rolling programming approach was followed in its implementation using the experience gained during the first eighteen months of implementation to modify the Programme to cover the entire five-year cycle. Consequently, 17 projects not listed in the original ASEP II document have been proposed during the latter part of the cycle. These projects are among the 32 projects in ASEP II that will be carried over to ASEP III.

II. OBJECTIVE AND POLICY GUIDELINES

In formulating environmental policies, it is useful to recognize that environmental problems are multi-faceted and can assume different dimensions or forms. The direct externalities of economic activities, such as, the emissions and effluents from industrial plants, are the more readily recognizable forms of environmental problems. The depletion of natural resources due to overuse constitutes yet another dimension of the problem. Desertification, deforestation, salinization, and soil erosion are examples of environmental problems resulting from the excessive exploitation of natural resources. Conflicts arising from the different uses of the environment are another facet of environmental problems. Thus, large water resources projects, such as the building of dams for hydroelectric power generation, may conflict with other uses of the environment, such as, for human settlements, agriculture, or conservation.

During the last decade, the salience of environmental issues within ASEAN has grown and the multifarious nature of environmental problems has been recognized. Nonetheless, environmental policy formulation and implementation continue to be ensnared in a host of other political and economic issues. The prominence of political and economic considerations in both national and regional policy formulation is understandable in the light of ASEAN's desire to maintain peace and attain prosperity for the region. Unfortunately, this situation has resulted in the episodic nature of environmental policy making and planning and has given rise to the apparent conflict between economic development and environmental protection.

Among the major challenges confronting ASEAN today, and perhaps up to the next century, is the problem of providing its people the basic human needs in the face of increasing pressures from a rapidly growing population. The World Development Report 1986, a publication of the World Bank, projects that the population of

Indonesia will increase from 159 million in 1984 to 212 million in year 2000 and will reach the hypothetical size of stationary population of 361 million by the year 2010. The population of the Philippines will reach 76 million in year 2000 and 137 million in year 2015 from 53 million in 1984. The figures for Thailand and Malaysia are 50 million (1984), 66 million (2000) and 101 million (2005) and 15 million (1984), 21 million (2000) and 33 million (2005), respectively. In less than two decades, the population of ASEAN is projected to increase by 35% from 280 million in 1984 to 378 million in year 2000. This represents an increase of about 98 million, a figure that is more than six times the 1984 population of Malaysia.

The response of ASEAN to the aforementioned problem is to accelerate its development activities. This means rapid industrialization, more intensive and extensive agriculture, and increased exploitation of natural resources. While these efforts have made ASEAN among the fastest developing regions in the world, they have also resulted in industrial and agricultural pollution, depletion of natural resources, and conflicts in the use of the environment. If the adverse environmental impacts of these development activities are not avoided or mitigated, the environment's ability to sustain its productivity will decline resulting in long-term, permanent damage.

To resolve the apparent conflict between economic development and environmental protection, ASEAN will adopt the principle or philosophy of environmentally-sound and sustainable development which seeks to systematically integrate environmental considerations into all aspects of development and into all relevant sectoral activities. Consequently, the harmonization of economic development with environmental protection, the integration of economic and environmental planning at all levels, and the implementation of environmentally-sound and sustainable development strategies will constitute the central theme of the ASEAN objective and policy on the environment for the coming years.

Mindful of the objectives adopted in the Manila Declaration on the ASEAN Environment on 30 April 1981 and the Bangkok Declaration on the ASEAN Environment on 29 November 1984, and recognizing the need for systematic integration of environmental concerns at all stages of economic development efforts, ASEP III sets the following programme objective:

To promote the proper management of the ASEAN environment so that it can sustain continued economic development while maintaining a high quality of life for the people of the ASEAN countries.

To achieve this objective, the following policy guidelines are formulated for the implementation of ASEP III:

1. Cooperation among its member countries in the field of the environment shall be promoted, with emphasis on the following six priority areas: environmental management, nature conservation and terrestrial ecosystem, industry and environment, marine environment, urban environment, and environmental education, training, and information.
2. The environmental dimension shall be integrated, at an early stage, into regional and national development planning and implementation in order to attain an environmentally-sound and sustainable economic development.
3. The regional and national institutional structures shall be strengthened to make them more responsive to the needs of ASEAN in implementing programmes and projects aimed at protecting the ASEAN environment.

4. Cooperation with other countries outside of ASEAN and with international agencies shall be encouraged for the purpose of sharing experiences in the management of the environment, promoting transfer of technology, and solving common global environmental problems.

These policy guidelines respond to and recognize the following realities: that environmental problems do not cease at national boundaries; that there are existing conflicts between economic development and the regenerative capacities of natural systems; that implementation is normally the weakest link in the operationalization of policies; and, that the environment is a global common.

III. PRIORITY AREAS AND GOALS

In accordance with the first policy guideline for the implementation of ASEP III, six areas will be afforded high priority, namely, environmental management, nature conservation and terrestrial ecosystem, industry and environment, marine environment, urban environment, and environmental education, training, and information. The first area deals with the overall and integrated approach to the problems of the environment and the use of management tools, such as environmental impact assessment, and the application of advanced technologies, such as remote sensing, to solve these problems or at least mitigate their adverse impacts. The next four areas represent four selected sectors of the ASEAN environment in which there are increasing pressures resulting from continued economic development and population growth. Finally, the sixth area represents the human resources development aspect of ASEP III. Human resources development is the bottom line in all planning processes, since effective implementation can be achieved only if competent individuals are available to do the job and there is a political will to do it.

Environmental Management

Environmental management is now well recognized at both the conceptual and policy levels. The interdependence between environment and development, that one cannot be sustained without the other, is now widely accepted by policy makers. That this is true in ASEAN is apparent in a number of national programmes and projects. The Kelang Valley, the Songkhla Lake, and the Integrated Palawan Environmental Management Projects in Malaysia, Thailand and the Philippines, respectively, are examples of environmental management plans prepared for specific areas earmarked for

development. The Songkhla Lake Basin Planning Study is the first project in ASEAN to incorporate the environmental dimension in the overall planning process. The Jakarta-Puncak Corridor Environmental Management Strategy: UNEP Clearing House Program in Indonesia is an example of an environmental management program for an area which is under considerable environmental stress resulting from urbanization and development. However, there is still much to be done in actually integrating the environmental dimension into development activities at the implementation level.

In the long term, the best approach for ensuring environmental protection is through the integration of economic and environmental planning at all levels. This requires the application of evaluation techniques, such as the EIA, from the earliest stage of the planning process. It may also necessitate the use of advanced technologies, such as remote sensing, to ensure that a comprehensive picture of the environmental conditions is taken into consideration.

The integration of environmental concerns into economic development during the planning and design stages of programmes and projects is rendered ineffective if measures to monitor and manage the environmental effects are not incorporated. For this reason and to further foster regional cooperation and enhance the development of environmental management, the following goals have been set in ASEP III:

- Goal No. 1: Implementation of demonstration projects on environmentally-sound development to verify the established environmental concepts and guidelines on environmental management and to serve as pilot projects in integrating the environmental dimension in economic planning and in development activities at the field level.

Goal No. 2: Application of developed methodologies, particularly environmental accounting and EIA methodologies, and use of advanced technologies, such as remote sensing, in development planning and project evaluation, implementation, and monitoring.

Goal No. 3: Enhancement of regional capability in environmental legislation and environmental accounting procedures through joint research programmes, and sharing of information, experience, and expertise.

Nature Conservation and Terrestrial Ecosystem

The ASEAN region has abundant natural resources and has thirty percent of the world tropical forest. During the last two decades, ASEAN countries have embarked on massive economic development activities aimed at raising the standard of living of the ASEAN people. These activities have exerted considerable pressures on the region's natural resources since large outputs from primary industries like forestry, agriculture, and energy were required. The cutting of valuable timber for export was increased to earn much needed foreign exchange. Large tracts of land have been submerged to produce hydroelectric power or cleared for the construction of roads, industrial plants, housing, and other infrastructures. These activities have brought some wealth to the region but some of the economic successes have been at the expense of much priceless and rich genetic resources.

The interdependence between environment and development is most pronounced in the area of nature conservation and terrestrial ecosystem management. This fact has been recognized in the formulation of ASEP I and ASEP II, and ASEAN cooperation in this area has progressed well as evidenced by the ASEAN Agreement on the Conservation of Nature and Natural Resources and the ASEAN

Declaration on Heritage Parks and Reserves. However, there is need to integrate conservation with development.

Deforestation is among the most serious environmental concerns of all ASEAN countries except Singapore and Brunei. The apparent lack of concern on the severity of this problem can be traced back to its two major causes, namely, excessive commercial logging, on one hand, and shifting cultivation and fuel wood gathering, on the other. The former is normally in the hands of the very rich while the latter is a preoccupation of the very poor. The middle class and the professionals are not directly affected by the adverse consequences of deforestation, hence the apparent weakness in the overall effort to solve the problem. A possible solution is the preparation and implementation of a comprehensive development plan for the rational exploitation and use of the ASEAN forests taking into consideration the needs of all sectors of society.

In line with the overall objective of ASEP III of integrating environmental protection, economic development, and quality of life, and in accordance with the second policy guideline for the implementation of ASEP III, this programme area does not limit itself to conservation, per se, but includes a rational and integrated approach to conservation and development. This concept is reflected in the following goals under this programme area:

Goal No. 4: Implementation of a regional programme on nature conservation with emphasis on the conservation of wild flora and fauna of the region; the harmonization of the list of endangered species of ASEAN countries; and the training of park and reserve wardens.

Goal No. 5: Development of regional programmes on the management of wetland ecosystems; management of wildlife species of economic importance; and the protection of migratory species that cross ASEAN borders.

Goal No. 6: Development and implementation of a regional programme for the development, protection, and rational exploitation of forest resources of the ASEAN region; and the establishment of adequate and proper monitoring, management and information system for the control of soil erosion and the practice of shifting cultivation.

Industry and Environment

The ASEAN is among the world's most rapidly industrializing regions. The 1986 World Development Report published by the World Bank reports that for the five ASEAN member countries the industry's share in Gross Domestic Product (GDP) increased, between 1965 and 1984, from 12% to 40% for Indonesia, from 24% to 35% for Malaysia, from 28% to 34% for the Philippines, from 23% to 28% for Thailand, and from 24% to 39% for Singapore, or an arithmetic average increase of from 22% to 35% for ASEAN. Industrial growth and economic development are further reflected in the huge increases in per capita energy consumptions of ASEAN countries. In terms of kilogram oil equivalent, the per capita consumptions between 1965 and 1984 increased from 91 to 205 for Indonesia, from 312 to 716 for Malaysia, from 160 to 271 for the Philippines, from 80 to 320 for Thailand, and from 670 to 2520 for Singapore.

Among the major industrial pollution problems in ASEAN countries are those coming from the palm oil and rubber industries in Malaysia, the coconut and sugar processing industries in the Philippines, and the tapioca processing industries in Thailand. The magnitude of the pollution load is evident from the figures for palm oil in Malaysia. In 1985, a total of 224 mills were in operation with sizes ranging from 10 to 60 tonnes FFB per hour. The mills generated 1640 tonnes BOD per day or a population equivalent of 33 million, more than twice the entire population of Malaysia. Substantial progress have

been achieved by Malaysia, the Philippines, and Thailand in solving these industrial pollution problems and emphasis has shifted to the recovery and utilization of by-products from these enormous amounts of wastes. ASEAN cooperation in this area is aimed at promoting intra-ASEAN transfer of technology through the implementation of demonstration projects.

The recent and rapid development of low- and non-waste manufacturing technologies, the change in industry's perception of what constitutes waste and what could be a potential source of raw materials, and the tragic incident in Bhopal have also influenced the thinking of ASEAN with respect to the relationship between industry and environment. The impact of these recent events and developments and the desire of ASEAN to find feasible solutions to the pollution problems brought about by its traditional industries are reflected in the following goals for ASEP III:

- Goal No. 7: Implementation of demonstration projects in industrial pollution control with emphasis on clean technologies in specific industries, resource recovery, waste recycling and utilization, and proper waste disposal.

- Goal No. 8: Establishment of proper management programmes for the control of hazardous substances and wastes.

- Goal No. 9: Development and implementation of a regional programme on the prevention of industrial accidents which may have adverse environmental consequences through proper risk assessment, adequate handling procedures, safety measures, emergency plan, and the like.

- Goal No.10: Development of methods for the assessment of highly pollutive industries and potentially harmful chemicals entering ASEAN.

Urban Environment

In both ASEP I and ASEP II, the environmental problems in the urban environment are considered as a mere sector of industry and environment. ASEP I confined its attention to the establishment of adequate urban air and water quality monitoring systems to determine the quality of the urban environment. ASEP II expanded the scope somewhat by including urban air and water quality management systems, including the control of effluents from small and medium scale industries.

ASEP III recognizes that there are multifarious environmental problems in the urban centers of ASEAN which are not necessarily related to industry. On one hand, there are the problems of air and water pollution, solid wastes, inadequate urban parks and greenery, and the presence of slums and other forms of marginal settlements; and, on the other hand, there are the problems associated with development, like traffic noise and congestion and the new bio-physical problems associated with the construction of high-rise structures in the principal cities of ASEAN.

The principal cities of ASEAN, like Jakarta, Kuala Lumpur, Manila, and Bangkok, are reeling under increasing pressures from a rapidly increasing population. In 1984, 39% of the entire population of the Philippines live in the urban areas. For Malaysia, Indonesia, and Thailand the corresponding figures are 31%, 25%, and 18%, respectively. In the case of Thailand, 69% of the urban population are found in Bangkok, the country's capital and largest city. In the Philippines, 30% are in Manila, in Malaysia, 27% are in Kuala Lumpur, and in Indonesia, 23% are in Jakarta.

Traffic noise and congestion, inadequate sewerage system, poor garbage collection and disposal, heavily polluted urban rivers, and air pollution from dust, smoke, and other particulates seem to pervade the urban centers of ASEAN. In this regard, Singapore seems to be an exception. Aside from a few problem areas, like vehicle exhaust emission and noise pollution, Singapore has successfully

implemented measures to create a clean urban environment. Extensive water pollution control and solid waste management programmes have resulted in the cleaning up of the Kallang Basin and the Singapore River. Singapore has also constructed an extensive network of sewerage facilities which in 1986 had 1,925 km of public sewer network serving 95% of the population, six sewage treatment works which can handle 835,000 m³/day, and 123 sewage pumping stations. A fleet of 270 refuse collection vehicles and 60 mechanical sweepers, a solid waste transfer station in Kim Chuan, and two incineration plants in Ulu Pandan and Tuas have kept Singapore's streets garbage-free.

Since a large proportion of the population in ASEAN countries live in the urban areas, the urban environmental problems are really what most people perceive as "the problems of the environment". Consequently, ASEP III addresses this problem and has established the following goals:

- Goal No. 11: Integration of the experience gained in air and water quality monitoring and management to serve as bases for decision making and to provide inputs for public information.
- Goal No. 12: Development of an integrated approach to the management of the urban environment with emphasis on noise, water and air pollution, solid wastes, and heat islands and temperature effects arising from high-rise structures.
- Goal No. 13: Implementation of demonstration projects to upgrade urban parks and to improve urban environmental quality, particularly in the slum areas and marginal settlements.

Marine Environment

The marine environment is an ASEAN regional common, a fact that has been recognized from the very beginning of ASEAN cooperation. For this reason, among the first items to be adopted by ASEAN countries, with the catalytic and supportive role of UNEP, was the Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the East Asia Region.

The Philippines, Indonesia, Malaysia, and Thailand have extensive fishing industries. Thailand's national waters in the Andaman Sea and the Gulf of Thailand, for instance, have a maximum sustainable yield of 1.5 million metric tonnes. Singapore has one of the world's leading shipyards and the coastal waters of Brunei Darussalam are occupied by many oil rigs and production platforms while their associated pipelines criss-cross the seabed.

In line with the central concept of ASEP III of fully integrating environment and development, the Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the East Asian Region will be revised and implemented. The marine environment is recognized not only as a common regional heritage which needs to be conserved and protected, but also as an abundant source of resources which, if used rationally, can help foster economic development and improve the quality of life in ASEAN. With this in mind, ASEP III aims to accomplish the following goal:

Goal No. 14: Implementation of the revised Action Plan for the development, protection, and rational exploitation of the marine environment and resources and the coastal areas of the ASEAN region.

Environmental Education, Training, and Information

After ASEP I and ASEP II, there now exist in all ASEAN countries

groups of individuals and institutions well-versed in the environment field and aware of the value of environmental protection and management. Consequently, there are now a few NGOs in ASEAN that advocate environmentalism. These include the Sahabat Alam Malaysia and Nuclear-Free Philippines. Together with other NGOs, Sahabat Alam Malaysia has been able to mobilize public opinion to resist a hydroelectric development project in a national park. Nevertheless, much still needs to be done to promote environmentalism in ASEAN. In the Philippines, the Haribon Foundation can count on a membership of less than 200 out of a population of nearly 55 million. In contrast, environmental NGOs in the United States, like the Defenders of Wildlife, Friends of the Earth, and the National Audobon Society, have a total membership of nearly two million. In Australia, environmental NGOs number more than 11,000 out of a population of only 25 million.

ASEP III is therefore aimed at sustaining the groups that have developed under ASEP I and II, at promoting environmental awareness in other sectors, and further enhancing information exchange among member countries of ASEAN. These are apparent in the following goals:

- Goal No. 15: Preparation of regional and national action plans in environmental education and training with emphasis on the primary level and on specific priority groups.
- Goal No. 16: Implementation of a regional programme leading to the establishment of an information network among ASEAN countries and the publication of regular reports on the status of the environment in member countries using a common format for areas of common concern.
- Goal No. 17: Implementation of a regional programme to promote environmental awareness among the general public.

IV. INSTITUTIONAL FRAMEWORK AND ORGANIZATIONAL STRUCTURE

ASEAN cooperation in the field of the environment has been carried out through the ASEAN Experts Group on the Environment (AEGE), a body under the purview of the ASEAN Committee on Science and Technology (COST). In the present organizational structure of ASEAN (Figure 1), COST, as well as the other non-economic or functional committees, is under the purview of the ASEAN Standing Committee and the ASEAN Ministerial Meeting. The five economic committees, on the other hand, are under the purview of the ASEAN Economic Ministers Meeting.

Under the ASEAN COST, there are ten official regional bodies consisting of two sub-committees, seven working groups, and one experts group. These are: Sub-Committee on Climatology, Sub-Committee on Protein: Food Habits, Working Group on Food Waste Materials, Working Group on Food Technology Research and Development, Working Group on Non-Conventional Energy Research, Working Group on Marine Sciences, Working Group on Microelectronics, Working Group on Materials Science, Working Group on Biotechnology, and the Experts Group on the Environment.

The AEGE became a permanent ASEAN body shortly after the ASEAN COST recommended that a meeting of ASEAN experts on the environment be convened to consider the proposed ASEAN Sub-Regional Environment Programme (ASEP), a document prepared by UNEP, and to discuss other areas of possible cooperation including follow-up action on the U.N. Conference and Exhibition on Human Settlements: Habitat held in Vancouver in 1976. This First Meeting of the ASEAN Experts on the Environment took place in Jakarta on 18-20 December 1978 and was attended by experts on the environment from the ASEAN member countries and by representatives from the ASEAN Secretariat and the UNEP.

The First Meeting of the AEGE agreed to recommend the creation of a Sub-Committee on Environment under the ASEAN Committee on Science and Technology. It was envisioned that the Sub-Committee will have the following functions: to coordinate and promote ASEAN cooperation in the field of the environment; to incorporate the environmental dimension in all aspects of planning and formulation of policies and programmes of other ASEAN Committees and related bodies; and to assist in seeking bilateral and multilateral financial support for projects that are ASEAN in character. Unfortunately, the Fifth Meeting of the ASEAN Standing Committee held in Bali on 27 June 1979 did not approve the recommendation. As a result, the AEGE remained as the regional body to coordinate ASEAN cooperation in the field of the environment. It has met regularly once a year since then.

At the Fourth Meeting of the AEGE held in Singapore on 8-10 April 1981, the Meeting recommended that a meeting of ASEAN experts be convened to consider the draft Action Plan on Nature Conservation in the ASEAN Region which was prepared by the International Union for the Conservation of Nature and Natural Resources (IUCN) with financial assistance from UNEP. The First Meeting of the ASEAN Experts on Nature Conservation (AENC) took place in Singapore on 25-26 March 1982 and the group has met regularly every year since then. Working under the purview of the AEGE, the ASEAN Meeting on Nature Conservation has become another formal venue for ASEAN cooperation in the environment field.

In the context of the restructuring of ASEAN and recognizing that environmental concerns are interactive with multifarious human activities that go beyond mere scientific and technological pursuits, the First ASEAN Ministerial Meeting on the Environment held in Manila on 30 April 1981 recommended the establishment of an ASEAN Committee on Environment. In consonance with this recommendation, the Second Ministerial Meeting on the Environment held in Bangkok on 29 November 1984 recognized the need to include the environmental dimension as "an integral aspect of project

development planning and implementation" and resolved that "environmental dimension be integrated into other activities of the ASEAN functional committees."

In view of the central role that the ASEAN environment plays in the quest for economic growth and development in ASEAN and having regard to the multifarious regional activities envisioned in ASEP III, there is need to further strengthen the regional institutional framework and organizational structure to make it more responsive to the needs of ASEAN during the next five years and beyond. The regional body on the environment must be high enough in the organizational hierarchy of the ASEAN so that it can effectively carry out the following functions, among others:

- (i) to promote, coordinate, and implement ASEAN cooperation in the field of the environment;
- (ii) to insure that the environmental dimension is incorporated in the plans, programmes, and projects of other ASEAN bodies;
- (iii) to promote cooperation with other countries outside of ASEAN and with international agencies for the purpose of sharing experiences in the management of the environment, promoting transfer of technology, and solving common global environmental problems; and
- (iv) to assist in obtaining financial support to ASEAN activities from within and from without of ASEAN.

The new ASEAN institutional framework and organizational structure in the environment field must also seek to rationalize the roles and functions of various ASEAN bodies concerned with the environment, namely: the ASEAN Experts Group on the Environment; the ASEAN Meeting on Nature Conservation; the Coordinating Body on the Seas of East Asia; the ASEAN COST Working Group on Marine Science; and the ASEAN COFAF Coordinating Group on Forestry.

V. PROGRAMMES AND PROJECTS

The sixty projects in ASEP III are divided into six priority areas, namely, environmental management, nature conservation and terrestrial ecosystem, industry and environment, urban environment, marine environment, and environmental education, training, and information. These projects are selected on the basis of three criteria: one, they are regional in character; two, they are relevant to the overall objective and the seventeen programme goals of ASEP III; and three, they are mutually supportive of and related to each other.

While the projects are divided into six areas, they are not, however, compartmentalized with little or no relevance to each other. On the contrary, the projects are interactive, integrative, and mutually supportive. To cite an example, the project on Environmental Management in the Agro-Industry (Area 1) can use inputs from three projects in Area 3 (Industry and Environment), namely, Technology Transfer on the Treatment of Effluents From Palm Oil and Rubber Industries, Anti-Pollution Technologies for Urban and Rural Areas, and Development Plan, Feasibility Study, and Demonstration Projects on Waste Utilization in the ASEAN Region. These projects can also provide very useful materials for the projects on Development of Communication Media and Materials for Enhancing Environmental Awareness in ASEAN (Area 6), as well as, provide inputs to the project on Formulation of Agreement for the Protection and Preservation of Marine Environment: Regional Agreement on the Use of Slop Reception and Treatment Facilities (Area 5). With these projects, four areas are interlinked and integrated.

Another example is the project on Case Studies on Environmental Impact Assessment (Area 1) which has five sub-projects. The five sub-projects can use inputs from the following other projects:

Research on and Development of Management Plan for Water Birds and Wetlands (Area 2); Air Pollution Control and Management in Flue Gas Desulphurization and Denitrification (Area 3); Vehicle Exhaust Emission in the ASEAN Region (Area 4); and Urban Air Quality Monitoring Through the Establishment of Networks (Area 4). Subsequently, these projects can provide inputs into the following projects: Development of Communication Media and Materials for Enhancing Environmental Awareness in ASEAN (Area 6) and Development of Techniques for Promoting Environmental Awareness for Specific Target Groups (Area 6).

As in ASEP II, ASEP III will adopt a dynamic programming approach by which projects will be reviewed annually and modified, if necessary, to insure that projects in any priority area remain regional in character, relevant to the overall objective of ASEP III, and related to the programmes and projects in the other priority areas.

The implementation of ASEP III must not be fragmented into six, unrelated areas. On the contrary, it must be integrated, with the six parts forming a cohesive whole. Fragmented, the six areas may be likened to the six blind men of Indostan. The legend tells the story of six blind men describing an elephant while limiting their individual observation to single parts of the animal's anatomy. Hence, the six blind men described the side of the elephant as a wall; the tusk, as a spear; the trunk as a snake; the knee, as a tree; the ear, as a fan; and the tail, as a rope. John Godfrey Saxe caught the very essence of the legend in the following verses:

"It was six men of Indostan
 To learning much inclined
 Who went to see the elephant
 (Though all of them were blind);
 To each by observation
 Might satisfy his mind

And so these men of Indostan
Disputed loud and long
Each in his opinion
Exceedingly stiff and strong
Though each was partly in the right
And all were in the wrong."

In ASEP I and II, 37% of all projects were completed within the planning cycle and 14% were not implemented. For ASEP III, the goal is to implement at least 90% of all projects and to complete at least 60% within the planning cycle, 1988-1992.

When completed, the 60 projects will result in the production of five guidelines, two manuals, one textbook, six management plans, and three sets of various teaching/visual aids. Thirteen regional seminars/workshops and thirteen different regional training courses will be conducted. These outputs, as well as the reports generated by the pilot/demonstration projects and the EIA studies, will contribute towards the attainment of the overall programme objective of promoting the proper management of the ASEAN environment so that it can sustain continued economic development while maintaining a high quality of life for the people of the ASEAN countries.

Priority Area: Environmental Management

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
1. Environmental Management in the Agro-Industry Thailand	<p>To conduct pilot projects to demonstrate environmentally-sound developments and to verify established environmental concepts and guidelines for agro-industries in ASEAN.</p> <p>The agro-industries include:</p> <p>(a) Palm oil and coconut industries in Indonesia;</p> <p>(b) Palm oil and rubber industries in Malaysia;</p> <p>(c) Sugar and coconut industries in the Philippines;</p> <p>(d) Tapioca and sugar industries in Thailand.</p> <p>This project will interact very closely with and obtain inputs from other related ASEAN projects, such as: Technology Transfer on the Treatment of Effluents From Palm Oil and Rubber Industries; Anti-Pollution Technologies for Urban and Rural Areas; and Development of Intensive Pollution Control Technologies in the ASEAN Region.</p>	New	UNDP UNEP	X			1

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
2. Integrated Hydrological Technology for Water Resources Projects Thailand	To enhance and integrate hydrological technologies in the ASEAN region and/or obtained abroad, into an institutionalized system serving assessment, planning and management of water resources projects in the ASEAN countries. Activities include assessment and monitoring of water resources, followed by conversion of observed hydrological data into information required for taking decisions concerning planning and management of water resources and related projects.	New	UNDP WMO	X			1
3. Environmental Guidelines for Development Planning Malaysia	To develop environmental guidelines for development planning including the identification of development projects for which EIA is required, the formulation of criteria for identifying environmentally sensitive areas in ASEAN, and the development of pollution emission factors for small and medium scale industries to be used in environmental planning and management.	AECE-9 approved the project concept. Malaysia to reformulate the proposal to incorporate inputs from Thailand.	UNDP UNEP	X			2

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1990	1991 1992	
4. Case Studies on Environmental Impact Assessment Philippines	<p>To apply developed EIA methodologies on actual case studies on:</p> <p>(a) coal-fired power plants</p> <p>(b) mini-hydro power plants</p> <p>(c) air land noise pollution from urban traffic</p> <p>(d) forest products based industries</p> <p>(e) conversion of wetlands into fishponds</p> <p>All proposed EIA projects will be integrated into one project so that a meaningful comparison of methodologies can be made.</p>	<p>Proposal on EIA on Coal-Fired Power Plants was approved by COST-13.</p> <p>Proposal on EIA on Mini-Hydro Power Plants was approved by COST-14.</p> <p>The last three are new proposals submitted to ABGE-10.</p>	<p>Australia UNDP UNEP EBC</p>	X		2	
5. Regional Technical Cooperation Programme for Improving Environmental Monitoring and Surveillance Through Remote Sensing Thailand	<p>To strengthen capabilities for the collection and processing of environmental data through remote sensing. Activities include training and actual studies on LANDSAT imageries; training course on vegetation analysis and remote sensing techniques.</p>	<p>Original proposal approved by COST to be reformulated to include new proposals.</p>	<p>UNDP UNEP Canada Japan</p>	X		2	

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1990	1991 1992	
6. Development of Risk Assessment and Guidelines Technologies for ASEAN Countries Thailand	To develop risk assessment guidelines and to produce a computerized framework for classifying risk attributes using the Eastern Seaboard Development Project of Thailand and similar projects in other ASEAN countries as case examples.	Project proposal submitted to ABGE-10.	U.S. EWC	X			2
7. Manual on the Interpretation of Environmental Quality Data for Decision Makers Malaysia	To prepare a practical manual on the interpretation and assessment of environmental quality data and develop appropriate techniques for presenting relevant information to decision makers.	New	WHO-PEPAS UNEP			X	3
8. Comparative Environmental Law in the ASEAN Philippines	To compile, identify, and analyze the basic provisions and variations laid out in the environmental legislations of ASEAN countries with the end view of producing a textbook on ASEAN Comparative Environmental Law.	Project proposal submitted to ABGE-10.	UNDP UNEP	X			3

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
9. Consultant Mission to National Industrial Development Banks on Loan Policy for Industrial Pollution Control Philippines	To undertake a consultant mission to NIDBs in ASEAN to gather data and information on banking policies towards environmental protection and pollution control projects and to recommend courses of action for AMCs for the inclusion of these projects in NIDBs financing priority.	Project proposal submitted to AEGE-10.	UNDP UNEP ADB	X			3
10. ASEAN Workshop on Environment and Economics in the ASEAN Countries. Malaysia	To organize a workshop for planners and decision makers and illustrate the importance of environmental accounting and the relationship between environment and economics through the use of case studies.	New	ADB IBRD EWC	X			3

Priority Area: Nature Conservation and
Terrestrial Ecosystem

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
1. Establishment of an ASEAN Information Centre on Nature Conservation Indonesia	To strengthen BIOTROP to serve as the Centre.	Original project proposal approved by COST; to be reformu- lated to incorporate new proposal of Indonesia.	IUCN BIOTROP	X			4
2. ASEAN Park Study Tour Indonesia	To visit and study various ASEAN nature parks.	Approved by ABGE.	US	X			4
3. Management of ASEAN Heritage Parks and Reserves Philippines	To evolve a comprehensive plan of ASEAN Heritage Parks and Reserves where the main thrusts shall be the involvement of the local population in the planning and implementation of programs and the conservation of the resource base and the sustainable utilization of resources.	Project proposal submitted to AEGF-10; Indonesia will revise its portion of the project proposal.	US	X			4

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988 1990	1991	1992	
4. ASEAN Heritage Park and Reserve Training and Technical Assistance Indonesia	To strengthen the capability of member countries in the management of their national parks and protected areas through a series of training workshops.	Project proposal submitted to ABGE-10.	U.S.	X			4
5. Wildlife and Habitat Information System Malaysia	To prepare an ASEAN wildlife and habitat information system which includes a data base system, a wildlife status reporting system, and a school and public information system on nature conservation.	New	WWF IUCN UNEP		X		4
6. Research on and Preparation of Conservation, Recovery and Management Plan for Endangered Species and Important Wildlife Malaysia	To conduct a comprehensive study on endangered species (rhino, seladang, tiger, ur-galates, pheasants, etc.) including the development of a recovery plan, captive breeding programme, management of game species, and wildlife translocation. Activities also include training on wildlife conservation and management with possible involvement of the Smithsonian Institution; regional workshop on wildlife research and management.	New	WWF IUCN		X		4

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
7. Regional Training Course for Forest Guards and Wildlife Rangers on Forest and Wildlife Protection and Management Indonesia	To train ASEAN forest guards and wildlife rangers on the proper protection and management of forest and wildlife through lectures, presentation and discussion of case studies, field trips and on-site field practicum.	New	IUCN	X			4
8. Wildlife Resources Development and Utilization for Rural People in ASEAN Indonesia	To maintain essential ecological processes and life support systems, preserve genetic diversity and ensure sustainable utilization of species and ecosystems; to contribute towards the promotion of socio-economic stability of rural communities. Related activities include: collection and dissemination of information, organization of training workshops, preparation of management plans for wildlife.	Approved by COST.	UNDP	X			5
9. Research on and Development of Management Plan for Water Birds and Wetlands Malaysia	To ensure that wetlands will be properly managed; to inventory ASEAN wetlands using secondary data and determine the environmental problems. Related activities include: collection of information, studies on conversion of wetlands to other uses and impacts to water birds, and holding of a regional workshop on wetland management.	Consolidation of project proposals submitted to AEGE-10.	WWF IUCN	X			5

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
10. Management and Protection of Migratory Species and Their Habitats Malaysia	To conduct research aimed at finding out the needs of species that migrate across the boundaries of ASEAN and to develop measures and strategies for the protection of these migratory species.	New	WWF IUCN		X		5
11. Inventory and Rehabilitation of Critical Watersheds in the ASEAN Countries Philippines	To update the inventory of critical watersheds in the ASEAN region; to identify the factors causing the degradation and recommend appropriate measures or develop management strategies for the rehabilitation or improvement of conditions in the identified critical watersheds.	Project proposal submitted to ABGE-10.	IUCN	X			6
12. Establishment of Criteria for and Monitoring of Soil Erosion Control and Land Reclamation Brunei Darussalam	To prevent land use problems proper criteria will be established concerning land form, slope, elevation, geology, and soil type and erosion monitoring studies will be undertaken.	Consolidation of project proposals submitted to ABGE-10.	IBSCRM Netherlands IUCN UNEP		X		6

Priority Area: Industry and Environment

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START		GOAL NO.
				1988 1990	1991 1992	
1. Anti-Pollution Technologies for Urban and Rural Areas Philippines	To organize five one-month training courses for ASEAN officials concerning the regulation, organization, technologies, economic interactions, and other components that are necessary for pollution control; to identify, describe, and evaluate the use and effectiveness of selected indigenous pollution control technologies; to establish incentive packages for inventors, designers, and users of cost-effective indigenous technologies; and to develop a regional plan to promote the use of these technologies.	Approved for funding under UNDP Fourth Cycle ICP. Preparatory assistance project issued to OPE and UNEP for hiring of an international consultant to prepare project document and to define the terms of the project more precisely.	UNDP UNEP	X		7
2. Technology Transfer on the Treatment of Effluents from Palm Oil and Rubber Industries Malaysia	To conduct a survey of palm oil mills and rubber factories in Malaysia with emphasis on pollution control systems used; training workshop for ASEAN professionals; and preparation of manual on pollution control in the palm oil and rubber industries.	Approved for funding under UNDP Third Cycle ICP; project documents have been amended and are being finalized.	UNDP UNEP	X		7

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START		GOAL NO.
				1988 1990	1991 1992	
3. Air Pollution Control and Management in Flue Gas Desulphurization and Denitrification Singapore	To organize a regional workshop to assess the various technologies for flue gas desulphurization and denitrification and determine their suitability to ASEAN.	Approved by COST-15; subsequently approved by ASEAN Standing Committee in January 1987. Endorsed by ASEAN Secretariat to UNDP/UNEP for funding.	UNDP UNEP	X		7
4. Development Plan Feasibility Study and Demonstration Projects on Waste Utilization in the ASEAN Region Thailand	To conduct a survey of major types of wastes which can be utilized or re-used; determine feasibility of waste exchange system; expand and develop utilization of agricultural wastes and by-products; conduct demonstration projects on waste utilization.	Consolidation of project proposals submitted to ABGE-10.	IBRD US Japan EC	X		7
5. ASEAN Workshop on Non- and Low- Waste Technologies Malaysia	To organize a workshop for professionals and decision makers on non- and low- waste technologies with the view of assessing their suitability to ASEAN.	New	EC	X		7

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
6. Management of Industrial Effluents, Water Quality Studies and Rehabilitation of Polluted Rivers • Philippines	To develop appropriate methods for the proper disposal and management of industrial effluents that are discharged into ASEAN rivers, including the use of central industrial treatment plants; to formulate a management plan for the rehabilitation of heavily polluted rivers; to identify readily available and practicable rehabilitation and control measures; and to conduct water quality studies and modelling.	Consolidation of UNIDO and several project proposals submitted to AEGE-10.	UNDP UNIDO	X			7
7. Modern Industrial Effluent Treatment Technologies in ASEAN Countries Thailand	To increase the use of modern process and wastewater technologies in industries; to develop R & D capabilities in industrial wastewater control and in low waste process technologies; and to develop institutional capability for cooperative exchange of research results.	Project concept developed by UNIDO and submitted to AEGE-10; Malaysia to submit its comments and amendments.	UNIDO			X	7

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
8. Training Workshops for the Transportation, Collection, Use, Treatment, and Disposal of Hazardous Substances Malaysia	To organize training workshops with a view to develop and prepare technical and management guidelines for the transportation, collection, use, treatment, and disposal of hazardous substances taking into consideration guidelines used by ASEAN member countries, as well as, existing international guidelines.	New	UNEP	X			8
9. ASEAN Workshop on the Control and Use of Chlorofluorocarbons Malaysia	To discuss the impacts of the control of CFCs on the ozone layer as well as on the industrial economy of ASEAN countries as small users of the product and to develop a plan of action to protect the ozone layer.	New	UNEP		X		8
10. ASEAN Workshop on Contingency Planning for Chemical Accidents or Spills Malaysia	To organize a regional workshop on contingency planning for chemical accidents or spills and to develop technical and management guidelines for major chemical accident prevention and emergency plan, including the establishment of safety standards, warning system, fire-fighting network, system of emergency response, clean-up program, emergency medical care, rehabilitation plan, and the like.	New	UNDP UNIDO UNEP ILO US EWC	X			9

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
11. Preparation of Guidelines for the Assessment of Highly Pollutive Industries and Potentially Harmful Chemicals Entering ASEAN Thailand	To develop guidelines for the assessment of highly pollutive industries that may be established in ASEAN and potentially harmful chemicals that may be imported into ASEAN.	New	US Japan EC	X			10
12. Development of a Notification and Assessment Scheme for Industrial Chemicals Singapore	To develop a notification and assessment scheme for industrial chemicals including the control of banned and restricted chemicals, such as detergents and dispersants, and introduction of a requirement for basic data sheet for chemicals to facilitate assessment by importing countries.	New	US Japan EC UNEP	X			10

Priority Area: Urban Environment

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			COAL NO.
				1988 1990	1991	1992	
1. Application of Meteorological Data in Air Pollution Monitoring and Control in the ASEAN Region Indonesia	To establish institutional linkage between the Weather Services Bureau and the Environmental Agency of each country with the view of ensuring the availability and completeness of meteorological measurements needed for developing good air pollution dispersion models. Activities include: seminars, training, installation of pilot stations, air pollution modeling, and information and data exchange.	Approved by COST-15; subsequently approved by ASEAN Standing Committee in January 1987; endorsed by ASEAN Secretariat to UNEP/UNEP for funding.	UNDP UNEP	X			11
2. Urban Air Quality Monitoring Through the Establishment of Networks Thailand	To establish air quality monitoring networks in the urban areas of the ASEAN countries using the same type of instruments and analytical methods, developing common data storage, retrieval and evaluation methods, and organizing regional training programmes for ASEAN personnel.	Approved by COST and accepted in principle by the EC for possible third party funding.	EC	X			11

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988 1990	1991	1992	
3. Acidification of Rain in ASEAN Countries Thailand	To investigate the degree to which acidification is already a problem in the ASEAN region; assess the potential for occurrence of harmful effects; to identify susceptible areas; to investigate the need for further and more systematic monitoring.	Project proposal submitted to ABCE-10.	UNEP		X		11
4. Vehicle Exhaust Emission in the ASEAN Region Singapore	To assist ASEAN member countries in controlling vehicle exhaust emissions by developing legislation and enforcement strategies, providing equipment for CO and HC measurements, and conducting training courses.	Approved by COST-15; Subsequently approved by ASEAN Standing Committee in January 1987; for submission to Japan for possible third party funding.	Japan	X			12
5. Integration of Water and Air Air Quality Management in Land Use Planning Process Thailand	To develop the methods for the integration of air and water quality management in the urban land use planning process with the view of minimizing environmental damage resulting from various urban development activities.	New	EC UNDP		X		12

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
6. Urbanization and the Environment in Capital Cities of ASEAN Malaysia	To examine the city as an ecosystem where there is an interaction between man and environment. Available data pertaining to physical setting, history, population, socio-economy, politics, culture, and development will be collected. The combined effects of these upon the bio-physical environment will be examined particularly as they relate to hydrology, climate, air and water quality, noise, health, and quality of life generally.	Project proposal submitted to AEGE-10.	UNHSC UNEP	X			12
7. Improvement of Urban Environmental Quality in Under-Served Areas Indonesia	To conduct a demonstration project aimed at improving the environmental quality in the marginal settlements and under-served urban areas.	New	UNHSC WHO-PEPAS UNEP	X			13

Priority Area: Marine Environment

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
1. East Asian Seas Action Plan COBSEA	<p>To protect the marine environment of ASEAN through joint collaboration. The activities include:</p> <p>(a) Compilation, evaluation, and systematic analysis of available data on the seas of ASEAN;</p> <p>(b) Assessment of oceanographic phenomena;</p> <p>(c) Assessment of oil pollution;</p> <p>(d) Assessment of non-oil pollutants;</p> <p>(e) Assessment of the impact of pollution on, and habitat degradation of coral ecosystems;</p> <p>(f) Information and data exchange.</p>	On-going	UNEP Other UN Agencies	X			14
2. Environmental Guidelines for Coastal Zone Management Indonesia	<p>To provide a rational strategy or approach for sustainable development of the coastal zone with minimum conflicts in resource use. The activities include: selection of study area, identification and survey of major coastal zone ecosystems, and regional seminar.</p>	Approved for Fourth Cycle ICP UNDP funding.	UNDP	X			14

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988 1990	1991 1992		
3. Integrated Island Ecosystem Development Approach Indonesia	To study the applicability of Island Ecosystem Dynamic Model as an approach for regional development in relation to long term environmental planning. The activities include: workshops/seminars, consultant service, data collection, and development of computer program.	Approved by COST-15; subsequently approved by ASEAN Standing Committee in January 1987; endorsed by ASEAN Secretariat to UNDP/ UNEP for funding.	UNDP UNEP	X		14	
4. Development of Cooperative Action Plan for Oil Pollution Combat (South China Sea) Indonesia	To develop a framework for the enhancement of cooperative and coordinated action in oil pollution combat in the South China Sea taking into account the national capabilities existing in each member state.	Approved for funding by UNDP to be implemented as a sub-project of another regional project.	UNDP IMO UNEP	X		14	
5. ASEAN Marine Species (Turtle and Giant Clam) Conservation Programme Philippines	To assess the status of research and conservation efforts on marine turtles and giant clams in the ASEAN region; to determine and implement management and conservation schemes; to conduct training programs.	Consolidation of project proposals submitted to AEGE-10.	IUCN WWF US Wildlife Fund	X		14	

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
6. Study on Sea Level Changes in Relation to Greenhouse Effect Malaysia	To study the implications of sea level changes to coastal settlements in the region and to develop a comprehensive programme to address the problems of sea level changes, particularly in relation to greenhouse effects and other phenomena. Activities include the holding of a regional workshop.	New	UNEP		X		14
7. Formulation of Agreement for the Protection of and Preservation of Marine Environment Malaysia	To formulate regional agreements covering the following: (a) to combat oil spills from all sources; (b) to control pollution from land based sources; (c) the use of sloop reception and treatment facilities.	New	IMO UNEP		X		14
8. ASEAN Symposium on Marine Resources and Pollution Spills Control and Management Thailand	To organize a regional symposium on the management, conservation, and rational utilization of marine natural resources and the control of pollution and spills in ASEAN coastal waters.	New	EC	X			14

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1990	1991 1992	
9. Spatial Planning for Source Control Programme for Heavy Metals Discharged Into Coastal Waters	To develop a source control programme for controlling the amount of heavy metals discharged into coastal waters. Activities include the identification of potential sources and means to control pollution and spatial planning.	New	US Canada			X	14

Priority Area: Environmental Education
Training, and Information

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988	1991	1992	
1. Development of Communication Media and Materials for Enhancing Environmental Awareness in ASEAN Singapore	To develop various communication media and materials to be used in developing environmental awareness in the general public and specific target groups.	Approved by COST-15; subsequently approved by ASEAN Standing Committee in January 1987; endorsed by ASEAN Secretariat to UNDP/UNEP for funding.	UNDP UNEP	X			15
2. Regional Programme for the Training of Trainers on Environmental Education in the ASEAN Region Philippines	To promote development and enhancement of environmental dimensions in education programmes of institutions of learning in the ASEAN region. Activities include: Planning and preparatory work and training workshops.	Approved by COST-15; subsequently approved by ASEAN Standing Committee in January 1987; endorsed by ASEAN Secretariat to UNDP/UNEP for funding.	UNEP UNEP UNESCO	X			15
3. Strengthening Public Awareness on Environment at the Village Level Indonesia	To develop environmentally-oriented programs at the village level where the village dwellers participate in the decision-making process and in the implementation.	Project proposal submitted to AEGE-10.	UNESCO UNEP	X			15

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988 1990	1991	1992	
4. Development of Techniques for Promoting Environmental Awareness for Specific Target Groups Thailand	To organize planning meetings and national workshops, followed by a regional seminar, aimed at the development of techniques for promoting environmental awareness in specific target groups.	New	UNESCO UNEP		X		15
5. Adaptation of Environmental Education Materials for Use in Primary Schools	To develop and produce environmental education materials such as pamphlets, exhibits, cassettes, slides, and video tapes for use in primary schools.	New	UNESCO UNEP	X			15
6. Computerization of Environ- mental Information and Data Thailand	To develop and produce a computer-based system for the storage and retrieval of environmental information and data.	New	UNEP	X			16

PROJECT/ACTIVITY COORDINATING COUNTRY	DESCRIPTION	STATUS	DONOR COOPERATING AGENCY	START			GOAL NO.
				1988 1990	1991	1992	
7. Publication of ASEAN Environment Newsletter IC-Philippines	To publish regularly a regional news- letter describing the activities of member countries related to environ- mental protection and management.	On-going	UNEP	X			16
8. World Environment Day All member countries	To celebrate World Environment Day with the view of promoting greater public awareness on the importance of the environment.	On-going	UNEP	X			17
9. Chemical Safety Campaign Thailand	To produce audio-visual aids and other similar materials for an ASEAN-wide chemical safety campaign.	New	Canada	X			17
10. ASEAN Wildlife Society	To hold regular meetings of the ASEAN wildlife society with the view of promot- ing greater public awareness on wildlife conservation and management.	New	WWF IUCN	X			17

Annex A: SUMMARY OF ASEP I AND II ACTIVITIES/PROJECTS

1.0 Environmental Management	!	ASEP I	!	ASEP II	!
1.1 Development of a Test Model for Environmental Assessment Statements		C			
1.2 ASEAN/UNEP EIA Workshop for Decision Makers		C			
1.3 Quantification of Environmental Parameters		C			
1.4 Case Studies on Environmental Impact Assessment		.		C	
1.5 EIA in ASEAN Industrial Projects		.		C	
1.6 Information Dissemination on EIA		.		G1	
1.7 Workshop on EIA for Water Resource Development Projects		C			
1.8 Formulation of Technical Guidelines on EIA of Specific Selected Industries		C			
1.9 Development of Environmental Planning Methodologies Suitable for ASEAN				C	
1.10 Demonstration Projects on Environmentally Sound Development				C	
1.11 Seminar for National Industrial Development Banks on Loan Policy for Industrial Pollution Control				N	
1.12 Seminar for Local Environment Consulting Firms				C	
1.13 National Workshop on the Application of Extended Benefit Cost Analysis				C	
1.14 Enhancement of Regional Capability in Environmental Legislation				P1	
1.15 Workshop on Evaluation of EIA Applications in ASEAN Countries				C	

1.0 Environmental Management	!	ASEP I	!	ASEP II	!
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|--|--|--|--|--|----|
| 1.16 Environmental Impact Study on
Coal-Fired Power Plants | | | | | P3 |
| 1.17 EIA of Mini-Hydro Power Plants | | | | | P3 |
| 1.18 Regional Technical Cooperation Programme
for Improving Environmental Monitoring
and Surveillance through Remote Sensing | | | | | P3 |
| 1.19 Environmental Guidelines for Development
Planning | | | | | P1 |

 2.0 Nature Conservation and Terrestrial Ecosystem ! ASEP I ! ASEP II !

2.1	Workshop on Conservation of Nature in ASEAN	C	
2.2	Inventory of Endangered Species in ASEAN Countries	G1	
2.3	Convention on International Trade of Endangered Species of Flora and Fauna (CITES)		C
2.4	Soil Erosion Control	C	
2.5	Establishment of ASEAN Heritage Parks and Reserves		C
2.6	Establishment of ASEAN School of Nature Conservation		C
2.7	Wildlife Research and Management		G1
2.8	Establishment of an ASEAN Information Centre on Nature Conservation		P3
2.9	Meeting of ASEAN Experts on Nature Conservation		G2
2.10	ASEAN Agreement on the Conservation of Nature and Natural Resources		C
2.11	Conservation of Tropical Forests		G1
2.12	Training in the Recovery of Tropical Forest Following Disturbance		N
2.13	Establishment of ASEAN Wildlife Society		G2
2.14	Regional Project on Wildlife Resources Development and Utilization for Rural People in Southeast Asia		P3
2.15	Urban Park Development and Greenery		P1
2.16	Wildlife in Captivity Management		N

2.0 Nature Conservation and Forest Ecosystem	!	ASEP I	!	ASEP II	!
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|--|--|--|--|--|----|
| 2.17 ASEAN Workshop for Park Managers | | | | | C |
| 2.18 ASEAN Park Study Tour | | | | | P2 |
| 2.19 Development of Master Plan for ASEAN
Heritage Parks and Reserves | | | | | P1 |
| 2.20 Protected Area Training and Technical
Assistance | | | | | P1 |

3.0 Industry and Environment	! ASEP I	! ASEP II	!
3.1 Technical Workshop on Agricultural and Agro-Industrial Residue Utilization	C		
3.2 Pollution Control Technology	C		
3.3 Technology Transfer in Organo-Industrial Pollution Control		C	
3.4 Upgrading ASEAN Capability in Air Pollution Control and Monitoring		C	
3.5 Preparation of Policy Guidelines on Transportation, Collection, Treatment, and Disposal of Hazardous Substances		G1	
3.6 Preparation of Manuals on Environmental Quality Management of Selected Small- and Medium- Scale Industries		C	
3.7 Workshop-cum-Study Tour on Environmental Quality Management of Palm Oil and Rubber Mills		N	
3.8 Training Programme for Water Quality Monitoring and Management		C	
3.9 Technical Workshop on Industrial Processes and Control Techniques of Industrial Emission		N	
3.10 Technology Transfer on the Treatment of Effluents from Palm Oil and Rubber Industries		P4	
3.11 Anti-Pollution Technologies for Urban and Rural Areas		P4	
3.12 Air Pollution Control and Management in Flue Gas Desulphurisation and Denitrification		P3	

4.0 Urban Environment	! ASEP I ! ASEP II !	
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4.1 Urban Water and Air Quality Monitoring		
4.1.1 National survey of existing monitoring capabilities	C	
4.1.2 Regional collaboration through study tour to Singapore	C	
4.1.3 Technical collaboration with international programmes, particularly those of UNEP such as INFOTERRA, GEMS	C	
4.1.4 Urban Air Quality Monitoring Through the Establishment of Networks		P4
4.2 Workshop-cum-Study Tour on Solid Wastes Management		P1
4.2.1 ASEAN-UNEP Workshop on Managing Hazardous Wastes	C	
4.2.2 Study of the Management and Control of Hazardous Materials in the U.S.		P4
4.3 Air Quality Monitoring and Management		
4.3.1 Technical workshop on design of urban air pollution monitoring programme	C	
4.3.2 On-the-job training in ambient air monitoring		P4
4.3.3 Technical workshop on statistical management of air quality data		P4
4.3.4 On-the-job training in stock taking procedures in an advanced country		P4
4.3.5 On-the-job training in control of pollution from motor vehicles		N
4.4 Application of Meteorological Data in Air Pollution Monitoring and Control in the ASEAN Region		P3
4.5 ASEAN Project Proposal on Vehicle Exhaust Emission		P3

 5.0 Marine Environment

! ASEP I ! ASEP II !

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|-------|---|----|
| 5.1 | East Asian Seas Action Plan | |
| 5.1.1 | Compilation, evaluation, and systematic analysis of available data on the seas of ASEAN | G2 |
| 5.1.2 | Assessment of oceanographic phenomena | G2 |
| 5.1.3 | Assessment of oil pollution | G2 |
| 5.1.4 | Assessment of non-oil pollutants | G2 |
| 5.1.5 | Assessment of the impact of pollution on, and habitat degradation of coral ecosystems | G2 |
| 5.1.6 | Information and data exchange | G2 |
| 5.2 | ASEAN Guidelines on the Development and Management of Coastal Areas | P4 |
| 5.3 | Island Ecosystems Development Approach | P3 |
| 5.4 | ASEAN Marine Turtle Conservation Programme | P1 |
| 5.5 | Development of Cooperation Action Plan for Oil Pollution Combat (South China Sea) | P4 |
| 5.6 | Symposium on Marine Pollution in Shallow Waters | N |

6.0 Environmental Education, Training, and Information	!	ASEP I	!	ASEP II	!
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6.1 Environmental Education

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|-------|---|---|----|--|
| 6.1.1 | Meeting on environmental education
for Asia and Oceania | N | | |
| 6.1.2 | Asia-Oceania regional workshop on
higher environmental education | C | | |
| 6.1.3 | Regional seminar on higher
education and environment | N | | |
| 6.1.4 | Development of prototype curriculum
materials for environment education | | G1 | |
| 6.1.5 | Development of curriculum materials
for non- formal education | | G1 | |
| 6.1.6 | Development of Communication Media
and Materials for Enhancing
Environmental Awareness in ASEAN | | P3 | |
| 6.1.7 | ASEAN Action Plan on Environmental
Education and Training | C | | |

6.2 Environmental Training

- | | | | | |
|-------|---|--|---|--|
| 6.2.1 | Training on development of
institutional materials for
environmental education | | N | |
| 6.2.2 | Training on the integration of
environmental education concepts
in various disciplines as well as
on the development of prototype
institutional materials for out-of-
school environmental education | | N | |
| 6.2.3 | Training on wastewater control,
planning, and management | | C | |
| 6.2.4 | Training programme for water
quality monitoring and management | | C | |

6.0 Environmental Education, Training, and Information	!	ASEP I	!	ASEP II	!
6.2.5 Training on technology, treatment and disposal of toxic and hazardous wastes					C
6.2.6 Training on nature conservation					G1
6.2.7 Training of NGOs					G1
6.2.8 Regional Programme for the Training of Trainers on Environ- mental Education in the ASEAN Region					P4
6.2.9 Training Course on EIA as Decision Making and Planning Tools for Development					P1
6.3 Environmental Information					
6.3.1 Preparation of environmental country profile					C
6.3.2 Collaboration with international environmental information, collection, and dissemination programmes					G1
6.3.3 Publication of ASEAN Newsletter				.	G2
6.3.4 ASEAN Technical Journal on Environment				N	
6.3.5 World Environment Day				.	G1
6.3.6 Workshop for journalists					C
6.3.7 Strengthening public awareness on environment at the village level					P1

6.0 Environmental Education, Training, and Information	! ASEP I ! ASEP II !
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6.3.8 Acquisition of environmental
information and data:

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|---|----|
| 6.3.8.1 Establishment of regional
information retrieval
scheme | N |
| 6.3.8.2 Promotion of pilot projects
on systematic collection and
use of environmental
statistics | N |
| 6.3.8.3 Computerization of Environ-
mental Information and Data | P1 |

Legend

- C completed activity
- G1 on-going national activity
- G2 on-going regional activity
- N project not implemented
- D project discontinued
- P1 project proposal under preparation
- P2 project proposal approved by the AEGE
- P3 project proposal approved by ASEAN COST
- P4 project proposal approved by third party for funding
- P5 project about to start