



ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

Ministerial Conference on Environment and Development in Asia and the Pacific

27 and 28 November 1995

Bangkok

**REPORT OF THE PREPARATORY MEETING OF SENIOR OFFICIALS FOR THE
MINISTERIAL CONFERENCE ON ENVIRONMENT AND DEVELOPMENT
IN ASIA AND THE PACIFIC**

(Items 5 and 6 of the provisional agenda)

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I. MATTERS CALLING FOR ACTION BY THE CONFERENCE OR BROUGHT TO ITS ATTENTION

1. The Meeting generally agreed with the findings of the state of the environment report. In particular, it expressed concern at deteriorating environmental conditions and trends in the terrestrial, aquatic and atmospheric ecosystems both at the country and regional levels. It stressed the need for further enhancement of concerted action and systematic efforts by all concerned to improve the situation.
2. The Meeting noted that despite intense efforts, significant progress had not been achieved in the implementation of Agenda 21. There was, therefore, a need to further enhance the capacity-building and human resources development. Economic prosperities in some countries had provided opportunities for action, the environment had suffered considerable degradation. Review of current policies and the process of preparation of new policies should take into consideration the concerns of the environment.
3. The Meeting requested the Ministers to adopt the regional action programme attached as annex I. The Meeting decided to take steps to implement the Regional Action Programme and strengthen institutional frameworks for promoting capacities at regional, subregional and national levels. The Meeting also recommended the convening of the fourth Ministerial Conference on Environment and Development by the year 2000.
4. The Meeting decided to initiate the process for developing modalities and mechanisms which would involve Governments and the private sector for facilitating the transfer of environmentally sound technologies, especially state of the art technologies, on favourable terms as well as preferential and concessional terms and the promotion and support for developing environmentally sound endogenous technologies.
5. The Meeting reiterated that limited domestic resource and reduced flow of ODA were major constraints in the promotion of environmentally sound and sustainable development. It urged national governments, keeping in view their capacities to mobilize domestic resources for that purpose as stipulated in Agenda 21. Efforts should be made to work towards establishing a regional funding mechanism, when necessary, in the form of a trust fund to supplement existing funding sources.
6. The Meeting requested the Ministers to adopt the draft Ministerial Declaration on Environmentally Sound and Sustainable Development attached as annex II.

II. PROCEEDINGS OF THE MEETING

A. Review of the state of the environment in Asia and the Pacific

7. The Meeting generally agreed that the document E/ESCAP/SO/MCED/1 provided a reasonable overview of the environment and development in the region. It was noted that despite efforts, environment continued to deteriorate in view of which it was necessary to highlight the need for further strengthening institutional and implementation mechanisms.

8. The Meeting requested that the section on environmental conditions and trends should be strengthened and environmental implications of production and consumption patterns in the second part of the report be highlighted. Further, the issues relating to environment and development were stressed.

9. The Meeting recommended the presentation of a balanced view on the impact of trade on environment. It was felt that there was a need for continuing dialogues to promote mutually supportive environment and trade policies that lead to sustained economic growth.

10. A number of delegations proposed corrections and additions to the document E/ESCAP/SO/MCED/1 and the State of the Environment Report which was circulated as a background document. It was agreed that these may be communicated to the ESCAP secretariat before 31 March 1996 in order that they could be suitably incorporated in the final version of the State of the Environment Report.

B. Review of implementation of Agenda 21 and the Regional Strategy on Environmentally Sound and Sustainable Development, including transfer of environmentally sound technology; climate change and potential rise in sea level; and follow-up to the Global Conference on the Sustainable Development of Small Island Developing States

11. The Meeting considered the document E/ESCAP/SO/MCED/2 which highlighted the key issues and constraints for the effective implementation of Agenda 21 and the Regional Strategy in the context of the Asian and Pacific region.

12. The Meeting noted that further work would have to be done to implement the Agenda 21 and the Regional Strategy in view of slow progress and outstanding issues and constraints that impeded their implementation. It also took note of the modest but appreciable progress.

13. The Meeting noted that unless the issue poverty, unsustainable pattern of consumption and production, high population growth, inadequate financial resources, and access to technology were appropriately addressed, effective implementation of Agenda 21 could not be promoted.

14. The Meeting noted that many countries had already completed or were preparing their respective national Agenda 21. It expressed satisfaction that in several countries to ensure inter-ministerial collaboration, high-level bodies had been created. It further expressed the view that those

initiatives should be supported and regional organizations could play a catalytic role to facilitate the process.

15. The Meeting acknowledged the critical importance of people's participation in the decision making process, which should be further enhanced.

16. The Meeting considered the information document submitted by United Nations Development Programme on "Poverty Eradication: A Policy Framework for Country Strategies" (E/ESCAP/SO/MCED/3). It stressed that the attainment of sustainable development should start with poverty alleviation measures which would improve the quality of life of the poor and their environment. It also took note of the concerns expressed by many countries on the need to intensify their poverty alleviation programmes.

17. The Meeting noted the review and analysis of the issues of transfer of environmentally sound technologies (ESTs) and was in general agreement with the recommendations contained in the document E/ESCAP/SO/MCED/4. In particular, it reaffirmed the importance of ESTs for sustainable development and the need for further strengthening of the global partnership between developed and developing countries.

18. The Meeting observed that the lack of information exchange among groups and organizations was one of the major causes for the slow introduction of ESTs in the region. It also mentioned that awareness about available technologies, including implementation experiences and their appropriateness in developing countries, was an important requirement in the selection of those technologies. Information networks such as Mechanism for Exchange of Technology Information (METI) promoted by the Asian and Pacific Centre for Technology Transfer should be strengthened. The Meeting further observed that ESTs technology transfer should preferably be on concessional terms, because of its far-reaching social consequences.

19. The Meeting further noted that some developing countries had achieved success, through coordinated efforts of the governments, the private sector, NGOs and the general public and strengthened their technological capabilities and created favourable policy and institutional environment. In that connection, it believed that regional cooperation among developing countries of the region could be an effective tool in supplementing national efforts and building required endogenous technological capabilities.

20. The Meeting considered document E/ESCAP/SO/MCED/5 and called for providing due attention to the impact of sea level rise which would be potentially catastrophic for the island countries and would also adversely effect the coastal resources such as mangroves. It also noted the current initiatives in some of the countries for measures for reduction of green-house gases. The Meeting welcomed the views contained in the document on the adoption of no-regrets policy as well as national studies on vulnerability and risks. The Caspian Sea was cited for such a study.

21. The Meeting while considering the document E/ESCAP/SO/MCED/6 noted that the initiatives for action in Small Island Developing States of the Asian and Pacific region dealt with three sets of issues: survival issues, basic needs issues, and other related issues. The survival issues were associated with global climate change and sea level rise as well as destructive cyclones, and other natural disasters. The basic need issues related to conserving marine resources, forests, fresh water, biodiversity and other natural resources while other issues concerned population growth, mobility and urbanization as well as transport and communication.

C. Development of a regional action programme for environmentally sound and sustainable development, 1996-2000

22. The Meeting considered the development of a regional action programme for environmentally sound and sustainable development, 1996-2000 as contained in document E/ESCAP/SO/MCED/7. It mentioned that the regional action programme should contain practical and concrete ideas and activities. Special attention might have to be paid to the means of implementation particularly review, monitoring and reporting, technology, financial resources and mechanisms, role of programme coordinators and active involvement of private sector, NGOs and local bodies for ensuring its effective and efficient implementation.

23. The Meeting noted with appreciation the valuable preparatory work of the ASEAN-Subregional Consultative Meeting on Ministerial Conference on Environment and Development in Asia and the Pacific held in Bangkok from 19 to 20 October 1995 and incorporated many recommendations made by it in the regional action programme.

24. The Meeting emphasized that the regional action programme for environmentally sound and sustainable development, 1996-2000 had covered components necessary for comprehensive progress towards sustainable development. However, financial resources and mechanism would play a crucial role in the implementation of sustainable development policies, Agenda 21 and the regional action programme. In that connection, it expressed the view that while domestic resource mobilization would have to be enhanced, there was a simultaneous need for enhanced external funding support and substantial new and additional funding for implementation of Agenda 21 and sustainable development. It stressed that developed countries should, therefore, reaffirm their commitment to reach the accepted United Nations target of 0.7 per cent of GNP for ODA and augment their aid programmes in order to reach the target as soon as possible.

25. It was agreed that efforts should be made towards establishing a regional funding mechanism, when necessary, to supplement existing funding sources in the form of a trust fund which would invite funding support from Governments and others.

26. It further stressed that all the important actors namely the Governments, the United Nations organizations and bodies, multilateral financing institutions, intergovernmental and subregional institutions, private sector and NGOs, all have to cooperate actively and coordinate their efforts to ensure efficient and effective implementation of the regional action programme.

27. The Meeting noted the statement of the NGO/Media Symposium on Environment and Development: Strategies for 2000 on the implementation of the regional action programme.

D. Preparation of a ministerial declaration on environmentally sound and sustainable development in Asia and the Pacific

28. The Meeting had before it the draft Declaration on Environmentally Sound and Sustainable Development in Asia and the Pacific (E/ESCAP/SO/MCED/8) expressing the commitment of the region to pursue an environmentally sound and sustainable development. The Meeting reviewed and deliberated on the draft document and its outcome was presented for consideration by the Ministers attached as annex II.

29. The Meeting noted the grave concern of several delegations over the conduct of nuclear testing in the region for its impacts on the environment, in particular on coastal and marine ecosystems. These delegations strongly called for a stop to such testing and the conclusion of a Comprehensive Test Ban Treaty in 1996. The Meeting was requested to reflect this concern as an operative paragraph in the draft Ministerial Declaration on Environmentally Sound and Sustainable Development for which a paragraph has been submitted.

30. The Meeting noted that one delegation did not accept this paragraph given the position expressed by its government. The delegation urged the Meeting to seek wider consensus. Account should be taken, in particular, of the proposals made (by that government) with regard to the banning of all nuclear testing or any other nuclear explosion and of the intention of that government to accede the Treaty of Rarotonga. Another delegation expressed that this issue of nuclear testing may deviate the main focus of the declaration which is to implement the Regional Action Programme and then submitted an alternative paragraph which was not accepted by the Meeting. In view of the differing positions, the Meeting decided to put the first proposed paragraph on square brackets for its further consideration by the Ministers.

E. Other matters

31. Under this Agenda item, a draft resolution, titled "Transfer of Technology", was tabled on 25 November 1995 by its co-sponsors, namely, Thailand, Bangladesh, China, Fiji, India, Indonesia, Islamic Republic of Iran, Malaysia, Pakistan, the Philippines, and Singapore.

32. In view of the time constraints, and after some initial discussions, it was agreed not to submit the draft resolution to the Ministerial Conference. It was announced by the co-sponsor that the draft resolution would be formally tabled at the 1996 Commission Session for consideration.

III. ORGANIZATION OF THE MEETING

A. Opening, duration and organization of the Meeting

33. The Preparatory Meeting of Senior Officials for the Ministerial Conference on Environment and Development in Asia and the Pacific was held in Bangkok from 22 to 25 November 1995.

34. The inaugural address was delivered by His Excellency Mr Yingpan Manasikarn, Minister of Science, Technology and Environment who first welcomed the delegates to Thailand. He stated that the ESCAP region is characterized by socio-economic, natural resources and cultural diversity which are at the economic growth centre. He observed that diversity socio-economic and political consideration led to subregional groupings such as SAARC, ASEAN, SPC, ECO and the Forum Secretariat and that the spirit of regional and subregional cooperation is very much alive and that aspect should be further explored in the region. The Minister urged the United Nations bodies and agencies and the Asian Development Bank to support and assist in the implementation of the regional action programme through technical assistance, concessional funding and capacity building efforts. The Minister reiterated the crucial importance of setting up a trust fund to facilitate the implementation of the regional action programme which was to be operated under the principle of equal partnership among developed and developing countries could be a major step in the implementation of Agenda 21. The Minister stressed that the Royal Thai Government remained steadfastly committed to the UNCED agreements as could be gleaned by the policies it had pursued recently such as reducing lead exposure, cleanup of freshwater resources and the implementation of the Basel Convention.

35. The Executive Secretary of ESCAP warmly welcomed the delegations to the Preparatory Meeting and expressed his gratitude to the Minister of Science, Technology and Environment for opening the Meeting, reaffirming Thailand's commitment to the pursuit of an environmentally sound and sustainable development in the region.

36. In his statement, the Executive Secretary noted that despite the commitments made during the UNCED, there had been little achievement made in reversing the serious deterioration of the environment in the region. That has been primarily due to continued poverty, unsustainable growth and massive increase in population. Governments in the region were well aware of those problems and the importance of sustainable development. He acknowledged the serious efforts that were being undertaken by governments to respond to those challenges with modest but significant successes. Those isolated successes, however, should be made universal if only to ensure the sustainability of

development in the region. He added that that Conference assumes a special significance in the continued effort to attain sustainable development in the region. One of the main challenges for that Conference was to formulate a practical, achievable and purposeful regional action programme on environment and development to the year 2000. The task ahead was to redouble the current efforts, identify priorities and implement actions which made best use of the scarce resources. Given the magnitude of the problems, he stressed the importance of establishing a new equitable partnership through the creation of new levels of regional and international cooperation.

37. Speaking on behalf of the Asian Development Bank, the Chief, Office of Environment and Social Development, stated that the Bank recognized that the root causes of poverty and environmental degradation could be attributed to population growth, uneven consumption pattern, environmentally malignant technology and market and policy failures. Taking those issues into account, the Bank promoted the principle of integration of economic, environmental and social considerations and partnership which involved all the sector that would be affected or having a major stake in the process. He further stated that the Bank's assistance policy, effective January 1995 was that at least 50 per cent of the projects which the Bank would decide to finance, must aim at environmental enhancement and social development as the primary and secondary objective. The target was to reach 40 per cent of the total lending volume in those areas. The Bank had expanded its collaboration with institutions and other actors of sustainable development and providing support for regional/subregional cooperation and inter-agency collaboration. The partnership with the private sector was likewise increasing as they were recognized to be an important actor in the promotion of sustainable development in the region.

38. The Regional Representative of the United Nations Development Programme (UNDP) stated that sustainable development required that development should be guided by the overall goal of maximizing benefits to our society as a whole, but as a matter of highest priority to addressing and meeting the needs of the poor. He further stated that Agenda 21 of UNCED called for on actions on a priority basis to reduce the poverty, increase equity and encourage broad participation of people in both decision-making and development to ensure effective, efficient use and conservation of natural resources and environment, thereby ensuring that development is pursued on a sustainable development path. He emphasized the main theme of the United Nations sponsored World Social Summit of Copenhagen of April 1995, which was poverty alleviation. He mentioned that people need to be reassured of choice and participation, opportunities for education and training and access to productive means and employment as "People Centred Sustainable Development", which was indeed compatible with the concept of sustainable development and Agenda 21 of UNCED. He, therefore, urged that the Regional Action Programme coming out of that conference should include a strong initiative to alleviate poverty through the empowerment of people and the creation of an enabling policy and institutional environment.

39. On behalf of the United Nations Environment Programme (UNEP), the Deputy Regional Director and Deputy Representative for Asia and the Pacific stated that UNEP premises its programme from the overall objective of the Programme of Action that was developed during the meeting to provide a framework for catalising, coordination and organizing environmental education and training activities in the Asia-Pacific region at national, regional and sub-national levels directed towards environmentally sound socio-economic development. UNEP was keen in supporting the regional aspects of the Network for Environmental Training at Tertiary Level in Asia and the Pacific (NETTLAP) implementation strategy Regional Cooperation with National Implementation by planning and implementing a Regional Form on Environmental Training.

B. Attendance

40. The Preparatory Meeting was attended by the following members and associate members of ESCAP: Australia, Bangladesh, Bhutan, Cambodia, China, Democratic People's Republic of Korea, Fiji, France, India, Indonesia, Islamic Republic of Iran, Japan, Kazakhstan, Kiribati, Lao People's Democratic Republic, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Netherlands, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Russian Federation, Samoa, Singapore, Solomon Islands, Sri Lanka, Thailand, Tonga, United Kingdom of Great Britain and Northern Ireland, United States of America, Vanuatu, Viet Nam, Hong Kong and New Caledonia.

41. Representatives of Denmark and Switzerland also attended the Preparatory Meeting, in accordance with paragraph 9 of the terms of reference of the Commission.

42. The following United Nations bodies and specialized agencies were represented: United Nations Conference on Trade and Development, United Nations Development Programme, United Nations Centre for Human Settlements, United Nations Environment Programme, United Nations Population Fund, United Nations High Commission for Refugees, International Labour Organization, Food and Agriculture Organization of the United Nations, United Nations Educational, Scientific and Cultural Organization, International Civil Aviation Organization, World Health Organization, International Telecommunication Union, United Nations Industrial Development Organization.

43. The following intergovernmental organizations, non-governmental organizations and other organizations also attended: Asian Development Bank, Asian and Pacific Development Centre, Asian Productivity Organization, Committee for Coordination of Joint Prospecting of Mineral Resources in Asian Offshore Areas, International Organization for Migration, South Asian Association for Regional Cooperation, South Asia Cooperative Environment Programme, South Pacific Regional Environment Programme, South Pacific Commission, the International Council of Women, Asia-Pacific Forum of Environmental Journalists, Global Environmental Facility, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH and Press Development Institute of Thailand.

C. Election of officers

44. The Meeting elected Mr Kasem Snidvongs (Thailand) Chairman, Mr Zhong Shukong (China), Mr Bhaskaran Nair (Fiji), Mr Amir Hossein Hakimian (Islamic Republic of Iran) and Mr Vishwanath Anand (India) Vice-Chairmen and Mr Vishwanath Anand (India) also as Rapporteur.

45. On the recommendation of the Chairman, an informal working group was set up for the purpose of reviewing the regional action programme. Mr Zhong Shukong (China) and Mr Vishwanath Anand were designated to chair the informal working group.

D. Agenda

46. The Meeting adopted the following agenda:

1. Opening of the Meeting.
2. Election of officers.
3. Adoption of the agenda.
4. Review of the state of the environment in Asia and the Pacific.
5. Review of implementation of Agenda 21 and the Regional Strategy on Environmentally Sound and Sustainable Development, including transfer of environmentally sound technology; climate change and potential rise in sea level; and follow-up to the Global Conference on the Sustainable Development of Small Island Developing States.
6. Development of a regional action programme for environmentally sound and sustainable development, 1996-2000.
7. Preparation of a ministerial declaration on environmentally sound and sustainable development in Asia and the Pacific.
8. Other matters.
9. Adoption of the report.

F. Adoption of the report

47. The Preparatory Meeting of Senior Officials adopted the report on 25 November 1995.

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Annex I

DRAFT REGIONAL ACTION PROGRAMME FOR ENVIRONMENTALLY SOUND AND SUSTAINABLE DEVELOPMENT, 1996-2000

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INTRODUCTION

1. The achievement of sustainable development and the implementation of Agenda 21 require concrete actions at national, regional and global levels. The Governments of the Asian and Pacific region, with the support of international agencies, have drawn up, or are in the process of drawing up, and implementing national strategies and programmes to attain those objectives. There are, however, some common problems and transboundary issues which lend themselves to action at subregional, regional and global levels.
2. The principal objective of the regional action programme for environmentally sound and sustainable development is to foster regional cooperation to strengthen national capacities for the pursuit of environmentally sound and sustainable development. It is intended to promote programmes and projects at the regional level that are necessary to support national-level activities.
3. The Asian and Pacific region is characterized by a wide diversity in environment, natural resources, population and development and comprises most developed economies as well as newly industrializing, developing and least developed member States. It has registered remarkable growth rates and prosperity over the last two decades and transformed many developing member States into high growth areas. The region also encompasses economies in transition and a large number of island members and associate members with fragile ecologies facing special environmental and developmental problems.
4. The regional action programme has been developed keeping in mind major environmental and developmental problems, trends and findings as highlighted in the 1995 report on the state of environment in Asia and the Pacific. Economic growth, social development and poverty eradication are overriding priorities in developing countries and are essential to meeting national, regional and global objectives of environmental protection and sustainable development.
5. High population growth and unsustainable patterns of production and consumption are serious threats to the environment and natural resource endowments. Depletion of forest resources is a cause for major anxiety. The removal of forest cover and the consequent destruction of the habitat of flora and fauna threaten biodiversity. Unsustainable exploitation of coastal and marine resources and ecosystems has caused serious environmental damage. Unsound policies and actions in respect of land and water resources have led to land degradation and desertification. This will create not only widespread poverty, but also a vicious cycle of decreased soil productivity and lowered carrying capacity.
6. Poorly planned large-scale urbanization has resulted in the development of unhygienic human settlements, air and water pollution, solid wastes and overloaded urban infrastructure. Industrialization without adequate environmental safeguards has caused serious environmental problems of air and water pollution, land degradation, hazardous wastes, and toxic chemicals. Demand for energy in the region is growing at a rate faster than in other regions with a concomitant increase in the level of air pollutants.

7. Lack of environmental considerations in development activities may result in irreversible damage to the environment and impede sustainable development efforts. The integration of environment and development is, therefore, a prerequisite for achieving sustainable development. This integration is required at every level of administration. Environmental impact and risk assessment, environmental audit, the use of economic instruments, and natural resource accounting need to be strengthened. Institutional and legal frameworks for sustainable development require further improvement. Environmental awareness and education is a cornerstone for achieving success in this integration process. Sustainable development indicators should be developed against which every country may assess its progress towards sustainable development. This will necessitate environmental and natural resource monitoring and assessment on a regular basis.

8. The members and associate members of ESCAP are committed to sustainable development and have been making serious efforts in that direction. However, they have been constrained by inadequate financial resources, non-availability of suitable technology, inappropriate institutional and legal frameworks, inadequate human resources development, and lack of infrastructure. This is particularly acute in the island developing States owing to their limited economic base and natural and human resources.

9. The regional action programme accordingly incorporates four objectives (pollution prevention and control and enhancement of environmental quality; conservation and management of natural resources and ecosystems; sustainable development policy improvement; and sustainable development indicators and assessment) with 24 programme areas. It has been prepared to address the above issues and seek the cooperation of all concerned international and regional agencies and organizations, multilateral financing institutions, donor countries, the private sector, and non-governmental organizations (NGOs) to ensure its successful implementation. These efforts will also be coordinated with the relevant activities of the subregional organizations. The United Nations Commission on Sustainable Development will be invited to contribute fully to the implementation of the regional action programme.

10. It may be noted that poverty alleviation and regional economic cooperation are also critical elements of sustainability. However, regional action programmes dealing with these elements have been included in the Agenda for Action for Social Development in the ESCAP Region, adopted by the Asian and Pacific Ministerial Conference in Preparation for the World Summit for Social Development; in the Action Programme for Regional Economic Cooperation in Trade and Investment; and in the Action Programme for Regional Economic Cooperation in Investment-related Technology Transfer. The Commission, at its fifty-first session, also adopted the New Delhi Action Plan on Infrastructure Development in Asia and the Pacific. The regional action programme for environmentally sound and sustainable development is intended to complement these important initiatives. Separate programme areas on these issues have, therefore, not been proposed.

11. The time-frame for the implementation of the regional action programme is 1996-2000. The next ministerial conference on environment and development in Asia and the Pacific, which is scheduled to be organized by the year 2000 would review the progress in the implementation of the regional action programme and recommend further measures as necessary.

I. PROGRAMME AREAS

POLLUTION REDUCTION, PREVENTION AND CONTROL AND ENHANCEMENT OF ENVIRONMENTAL QUALITY

1. Air quality

Programme rationale and description

Air pollution from industrial and motor vehicles emissions is a major concern in most countries in the region. Concentrations of most air pollutants including carbon monoxide (CO), nitrogen oxide (NO_x), sulphur dioxide (SO₂) and total suspended particulates (TSP) in most mega-cities of the region exceed the guidelines proposed by the World Health Organization (WHO). With the economic development in the region, the air quality of the cities is further deteriorating. Air pollution is largely a result of the unsustainable use of resources and energy. Acidic deposition and haze are also problems in some parts of the region. Air Pollution has an adverse impact on economic development and the health of the people. The problem is most acute in large urban agglomerates and industrial towns.

Implementation strategy

Effective policies or programmes, including administrative, legal and economic measures, in air pollution prevention and control will be promoted. Most polluting industries and most polluted areas will be identified. Emphasis will be put on the development, dissemination, and use of cleaner production technologies and processes in identified industries and areas through, *inter alia*, the strengthening of national capacities. Cooperative efforts in the region should be made to screen and disseminate appropriate, affordable and cost-effective preventive and treatment technologies. Regional and subregional cooperation will be promoted on the study of the status of acidic deposition and haze and in the formulation of their management and control strategies including monitoring and assessment, early warning and prevention and control of their causes and consequences. In the transport sector, more efficient, less polluting and safer transport systems for large urban cities will be promoted, particularly mass transport and transport infrastructure and networks that cause least damage to the environment, as well as efficient and less polluting motor vehicles. The above strategy will be implemented through the formulation of guidelines, the provision of technical assistance and advice to the countries, the exchange of information, workshops and training courses, and demonstration projects, taking into consideration the work that has already been done by various organizations.

Tangible results

1. Improved nationally determined policies and programmes on air pollution prevention and control in the countries of the region, particularly in large urban centres;
2. Strengthened utilization of improved air pollution control technologies;
3. Assessment of the acidic deposition and haze in the region and their management and control strategy;
4. National and regional management and emergency response plans for air pollution episodes;
5. Enhanced capacity building on air quality management in urban and industrial areas;
6. Demonstration projects on cleaner production and appropriate air pollution abatement technologies;

7. Improvement of the air quality of large industrial and urban areas in the region;
8. Improved institutions and legal systems for air pollution control.

2. Water quality

Programme rationale and description

Water management is essential for multisectoral use and development. Industrial and domestic sources of pollution coupled with uneven sectoral and geographic distribution, wasteful use by consumers, and poor management have resulted in a shortage of clean water in many cities in the region. Caused primarily by agro-chemical pollutants, municipal and industrial waste, water pollution is responsible for substantial morbidity and mortality, particularly for children and the poor. Water supplies are contaminated by disease-bearing human waste and, increasingly, by toxic chemicals and heavy metals that are hard to remove with standard purification techniques. Competition among agriculture, industry and cities for limited water resources is constraining development efforts in many countries and will intensify with the expansion of population and economic development. Appropriate water resources management and conservation measures are necessary to enhance water quality and help promote adequate water supply and distribution.

Implementation strategy

Countries in the region will be encouraged to design and initiate national action programmes on management, conservation and plans for the enhancement of water quality including river rehabilitation programmes. Regional and subregional cooperation is needed to help countries in these endeavours. Environmental quality management issues in water basins such as the Mekong and Tumen will be addressed. Guidelines on integrated water resource planning, management and conservation will be formulated and widely disseminated followed by technical assistance support for implementation. Workshops and training courses will be organized to sensitize policy planners, resource managers, non-governmental organizations (NGOs) and special interest groups. Efforts will be mounted to improve the management of urban and industrial pollution and the provision of water supply and sanitation services, preferably on the basis of the principle of cost recovery and private sector participation. Technical assistance will be provided for policy reforms including pricing policies for effective and efficient management of water resources. Information on cleaner production technologies and processes as well as appropriate water pollution control and abatement technologies will be disseminated to the countries. Demonstration projects on integrated water management and conservation and water pollution control will be set up.

Tangible results

1. National action programmes and plans for water quality management, conservation and enhancement;
2. Improved institutions and legal systems on water management and conservation;
3. Guidelines on integrated water resource planning, management, and conservation;
4. Assessment of water quality at the regional level;

5. Information exchange, case-studies and demonstration projects on the improvement, management and conservation of water quality;
6. Improved water quality management and water supply and sanitation services in critical and environmentally sensitive areas.

3. Toxic chemicals and hazardous wastes

Programme rationale and description

With rapid economic development, the region is consuming and producing significant quantities of toxic chemicals and producing a large amount of hazardous wastes which do not undergo safe disposal and treatment, thereby causing great risks to human health, animals and plants. The increased agricultural intensity has led to overuse or improper use of agro-chemicals, both fertilizers and pesticides. Agricultural run-offs contaminate water supply and affect aquatic resources. Large quantities of toxic chemicals used for industrial and other purposes have also posed great risks.

Implementation strategy

Efforts should be made to systematically collect and exchange data on toxic chemicals and hazardous wastes in the region. Technical assistance and advisory services will be needed to develop a regulatory framework for harmonizing the classification and labelling of chemicals in line with the Convention No. 170 Concerning Safety in the Use of Chemicals at Work of the International Labour Organization (ILO). Regional guidelines for assessing highly pollutive industries and safe handling of potentially harmful chemicals will be developed and promoted. Efforts will be made to promote the participation of countries in the implementation of the prior informed consent procedures through legally binding instruments as contained in the Amended London Guidelines for the Exchange of Information on Chemicals in International Trade and in the Food and Agriculture Organization of the United Nations (FAO) International Code of Conduct on the Distribution and Use of Pesticides. Efforts should also be made to promote a more balanced use of agro-chemicals especially integrated pest management to meet the growing demand for food, while at the same time ensuring a more habitable environment. The drafting of agrochemical legislations in the countries of the region is seen as another way of improving the environmental management of toxic chemicals and hazardous wastes.

Technical assistance will be provided to the countries on the formulation of action plans for the implementation of the Basel Convention and the Chemical Convention. Regional, subregional or national centres for technical research, development and training will be promoted. Training workshops will be conducted on the minimization and reduction of hazardous wastes. Safe hazardous waste disposal and treatment technologies will be encouraged along with their transfer to the developing countries. Efforts will be made to prevent illegal international traffic in hazardous wastes through encouraging wide acceptability of the Basel Convention.

Tangible results

1. A regional database on quantities and sources of toxic chemicals and hazardous wastes;
2. Improved safety in the use of agro-chemicals through the training of pesticide applicators and vendors;

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3. A better institutional and legislative framework and technical procedure for the management of toxic chemicals and hazardous wastes;
4. Trained specialists in toxic wastes and hazardous waste management;
5. Regional guidelines for assessing highly pollutive industries and safe handling of potentially harmful chemicals;
6. Wider acceptance of the Basel Convention and the prior informed consent procedures under the Amended London Guidelines;
7. Integrated plans for the control and management of hazardous wastes;
8. Greater reuse and recycling of toxic wastes.

4. Urban environmental issues

Programme rationale and description

The rapid growth of population and consequent increased urbanization have created a number of urban environmental problems. Many cities are growing without proper planning, resulting in the rise of slums and squatter settlements, and excessive pressure on basic services such as water, sanitation, transport, as well as health, education and housing. Apart from these, environmental problems including the pollution of air, water, solid wastes and noise are most serious and require urgent attention.

People living in urban slums and squatter settlements both contribute to and are seriously affected by environmental degradation. Women and children in particular, are seriously affected. Improved understanding of the value and the management, use and care of the environment and natural resources should be promoted. Education and empowerment are two key elements in this process.

Most industrial and municipal solid wastes are discharged into the environment without treatment. Large quantities of solid wastes are dumped into various river systems and other water bodies leading to the pollution of the surface as well as the groundwater. The systems of collection, disposal and treatment of solid wastes are old, inadequate and irregular. This results in the leaching of chemicals into surface water and groundwater, and the breeding of flies, mosquitos and rats. Noise caused by traffic and construction is also a big problem. Owing to urban sprawl, transport as well as commuting problems have been exacerbated.

Implementation strategy

The urban action programme will be encouraged to select a feasible target for itself, namely a selected list of highly urbanized agglomerates and growing urban pockets for accelerated action. Water, conservation, equitable distribution, and cost recovery are key issues. In the case of air pollution by the transport sector, which will worsen with economic growth, the goals will include reducing emissions per vehicle mile travelled and controlling the total number of vehicle miles. Proper transport planning and traffic management will receive attention. With regard to solid wastes, emphasis will be put on minimizing wastes, maximizing environmentally sound waste reuse and recycling, promoting environmentally sound waste disposal and treatment and extending waste service coverage. As to noise, regulations on the control of noise will be strengthened. To tackle the urban environmental issues, it

is necessary to assist the countries in the formulation of integrated urban environmental plans which would *inter alia* include initiatives such as in the metropolitan environmental improvement programmes and healthy city approach. The centralized control of pollution, wherever appropriate, would be promoted. Activities would be promoted to improve urban environmental infrastructure facilities. Awareness campaigns on urban problems will be launched in critical areas and people's participation will be mobilized in solving their problems. Migration issues will be addressed and rural urban interaction will be promoted as a part of the strategy.

Tangible results

1. Integrated urban environmental action plans, covering urban forestry, green belts, migration and rural-urban interaction, transport, traffic commuter issues, water and sanitation, solid waste management, etc. for highly urbanized agglomerates and growing urban areas;
2. Enhanced capacity in integrated urban environmental management including effective policy development;
3. Improved urban environmental quality in critical areas;
4. Information exchange on urban environmental issues through the strengthening of networks such as CITYNET;
5. Increased private sector involvement in urban environmental improvement measures;
6. Increased awareness of urban problems and people's involvement in their mitigation.

5. Energy

Programme rationale and description

The supply and use of energy have environmental consequences. Power stations using fossil fuels, especially coal, are a major source of carbon dioxide, sulphur dioxide and nitrogen oxides, as well as toxic substances and particulates, which cause local air and water pollution and acidic deposition. The pollution problem has been exacerbated because of the inefficient use of energy sources. The control of atmospheric emissions of greenhouse and other gases and substances will increasingly be based on efficiency in energy production, transmission, distribution and consumption, and on a growing reliance on environmentally sound energy systems, particularly new and renewable sources of energy. Environmental concerns on water resources development of hydroelectric production are increasing.

Implementation strategy

There is a need to define a regional energy action programme that would have a national component, mainly managerial improvements through training, skill development, and decentralization and systems improvement; advocacy and extension services on conservation issues; research on renewable sources; promotion of awareness of technical and policy options; development of models for identifying cost effective solutions and reform of pricing policies. The available options to mitigate negative environmental impacts relating to energy could be broadly categorized into three main groups: (a) the supply-side option which includes choice of energy sources, operational improvements and institutional strengthening in both regulatory agencies and utility companies; (b) the demand-side option

focusing mainly on pricing reforms and energy conservation and efficiency improvement; and (c) new and renewable sources of energy options covering the promotion of new sources of energy such as solar, wind, biomass, tidal and geothermal installations etc. Clean coal technologies including use of clean natural and liquid gas and more energy efficient technologies need to be promoted, coal being the major source of energy in the region and the largest contributor to greenhouse gas emissions. One important area needing immediate attention is to reduce the negative environmental impacts of existing and future thermal plants by establishing pollution control devices and introducing clean technologies such as electrostatic precipitators, flue gas desulfurization and programmes on coal beneficiation.

The ultimate objective of this programme area is to reduce the adverse effects on the environment from the energy sector by promoting policies or programmes that will improve energy efficiency in the process of energy production, transmission, distribution and use and utilization of environmentally sound energy systems. Therefore, the countries in the region will be encouraged to cooperate in the research, development, transfer and use of energy efficient technologies, including clean coal technologies, natural and liquid gas as well as new and renewable energy sources. The development of institutional, scientific, planning and management capacities, particularly in developing countries will be promoted. Technical assistance will be provided to the countries in the formulation and implementation of strategies and plans for efficient energy production and application including the development of water resources for hydroelectricity. Workshops and training courses will be conducted to raise awareness of the environmental implications of energy development, energy efficiency and environmentally sound energy systems. Demonstration projects in these areas such as on clean coal technology, energy efficiency and renewable energy resources will be promoted.

Tangible results

1. Strategies and plans on energy efficiency and conservation in energy generation, transmission, distribution and use, and environmentally sound energy systems;
2. Enhanced national capacities on energy efficiency and conservation;
3. Research, development and information exchange and transfer of environmentally sound technologies on clean coal technologies including the disposal and use of fly ash;
4. Improved energy structure, energy efficiency and increased use of new and renewable energy sources;
5. A database on cleaner energy technologies.
6. Improved models for identifying cost effective solutions for reducing environmental impacts.

CONSERVATION AND MANAGEMENT OF NATURAL RESOURCES AND ECOSYSTEMS

6. Forests

Programme rationale and description

The forest resources of the region contribute significantly to the quality of the global environment. They also play an important role in the economies of most countries of the region. High population growth and poverty are the important causes of deforestation. Additionally, the forestry sector suffers largely because of weaknesses in policies and institutions, as well as methods and mechanisms adopted to support and develop the multiple ecological, economic and social roles of forests. Deforestation has thus become a serious and widespread environmental problem in the region. Loss or degradation of forests causes soil erosion, loss of biodiversity, damage to wildlife habitats and degradation of watershed areas, climate change, and results in fewer options for development. The present situation calls for urgent and concerted action to conserve, sustain and develop forest resources, including afforestation, reforestation and plantation development of suitable areas. Institutional and managerial capacities to promote sustainable forestry are necessary to promote sustainable development. Legal mechanisms should also be strengthened and effectively enforced in order to reverse the situation.

Implementation strategy

Since the forest reserves as well as the causes of their degradation vary from country to country, regional programmes should differentiate between countries with relatively high forest cover and those with low forest cover. In countries with high forest cover, there is a critical need for the reform of pricing and trade policies, improved management of public lands, and research on sustainable commercial forestry. In countries with low forest cover, the key issues are those of management, tenure, pricing, protection and preservation of resources in the existing reserves, and reforestation, through various mechanisms, including social forestry.

However, in general, at the national level, the action programme may focus on monitoring, research, education, training, afforestation, management and prevention of forest fires etc. Based on reinforced monitoring and assessment of forest resources at the national level through technical assistance, an assessment of forestry resources will be undertaken at the regional level. Governments will be encouraged to set up targets and objectives for protecting forest resources and technical assistance would be provided for this purpose, as appropriate. Institutional and legal measures for the conservation of forestry resources will be strengthened through technical assistance and advisory services. Policy changes will be needed in the area of property rights protection and demarcation, and in pricing issues. Countries of the region will also be provided with technical assistance to formulate policies on poverty alleviation, education and public awareness. A study on the accomplishments of social forestry could be prepared and disseminated.

Tangible results

1. An assessment of forestry resources in the region in terms of quality and quantity;
2. National plans for the management and conservation of forests;
3. Improved institutional and legal frameworks for forestry management;
4. Programmes to increase public awareness and promote education to conserve, sustain and develop forest resources;
5. Encouragement of Governments to address the root causes of deforestation, including high population growth and poverty;
6. Studies on the accomplishments of social forestry.

7. Biodiversity

Programme rationale and description

Concerns about the rapid loss of biodiversity in the region are increasing in the face of the extinction of some species and the agreements reached on the Convention on Biological Diversity. The threat to biodiversity stems mainly from habitat destruction, over-harvesting, pollution and the inappropriate introduction of foreign plants and animals. Urgent and decisive action is needed to conserve and maintain genes, species and ecosystems with the view to promoting sustainable management of biodiversity resources. The capacity for assessment, study and evaluation of biodiversity, the protection of the ecosystem, and ex situ and in situ conservation of biological resources particularly endangered and threatened species, need to be reinforced at the national level. Institutional and legal mechanisms also need to be strengthened and effectively enforced.

The traditional focus of efforts on biodiversity conservation has been on national parks, protected areas, and species preservation. Important as they are, they are incomplete without a recognition of the role of local communities in those efforts. The management of protected areas should seek to solicit the support of the local people and communities. Transferring some of the economic benefits derived from protected areas to local people is one tangible way through which the local people can be made to appreciate the importance of protected areas. In this regard, programmes to integrate biodiversity conservation and socio-economic development in and around protected areas, such as that promoted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) network of biosphere reserves, and buffer zone management should be encouraged.

Ecotourism is emerging as an important activity, which is likely to bring in tangible benefits to the local population. There is a need to develop methodologies on the assessment of the carrying capacities for ecotourism and to take steps to mitigate its negative environmental and socio-cultural aspects.

Implementation strategy

Workshops and training courses, including staff exchange, will be organized for the planning and management of protected areas. Governments, especially parties to the Convention on Biological Diversity will be assisted in biodiversity inventories, which will help them meet their obligations under the Convention. Finally, based on national inventories, a regional inventory can be prepared.

Governments will also be encouraged to prepare and implement management plans, with the active participation of local communities. In situ protection of ecosystems and ex situ conservation of biological and genetic resources, in particular, threatened and endangered species will be encouraged, *inter alia*, through technical assistance programmes. A subregional network of protected areas and subregional programmes for migratory birds and animals will be promoted. Efforts will be made to promote regional cooperation in identifying and designating transboundary protected areas. Subregional efforts for the protection of migratory species of birds and animals will also be enhanced, as appropriate.

Ecotourism will be promoted taking into consideration the conservation of forestry and biodiversity resources. Selected case-studies will be promoted on the carrying capacities of ecotourism development and the environmental and socio-economic aspects of ecotourism. Guidelines prepared by different agencies will be widely disseminated. Workshops and training courses will be organized to promote sustainable ecotourism development.

Tangible results

1. Assessment of the status of information and establishment of information and database systems on biodiversity at the national, subregional and regional levels;
2. Enhanced management plans for the conservation of biodiversity, including the establishment of gene banks;
3. Assessment and better conservation of endangered and migratory species of birds and animals;
4. Improved capacities for the promotion of ecotourism including case-studies on carrying capacities, environmental and socio-cultural aspects;
5. Promotion of the sound management of national parks and nature reserves including transfrontier protected areas;
6. Establishment of regional linkages of scientific and technological capabilities and the optimal utilization of existing institutional capabilities and networks;
7. Enhanced research and development policies including training, software development for bio-information and electronic networks;
8. Improved capacity for assessment, study, observation and evaluation of biodiversity;
9. Demonstration of linkages between biodiversity conservation and the socio-economic development of local communities in and around protected areas.

8. Coastal and marine environment

Programme rationale and description

Coastal areas are home to a very large proportion of the population in Asia and the Pacific. The richest mangrove and coral reef resources are located in the region. These resources provide habitats for breeding and harbour significant quantities of fishery resources essential for the livelihood of local communities and for export. Climate change and potential sea level rise may have adverse effect on coastal areas and marine resources. The coastal and marine resources have played and will continue to play an important role in the development of the economy.

The general mistaken perception that coastal areas have low economic value needs to be dispelled. The coastal and marine areas face the threat of environmental degradation from unchecked human intervention and pollution discharges from a number of sources, such as:

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- (a) Land-based sources of pollution resulting from economic, transport, tourism and industrial activities including oil spills, the discharge of sewage and industrial effluent and a heavy load of sediments;
- (b) Unplanned and improper developmental activities without appropriate coastal zone management plans;
- (c) Shipping and sea-based activities including oil spills, sludge disposal and mining in coastal areas;
- (d) Offshore petroleum and gas exploration.

Implementation strategy

The strategy would consist of linking national institutes and promoting coordination mechanisms, regionally and nationally, for strengthening and harmonization of databases, preparation of profiles on the environment of coastal areas; plans for their integrated management and improved protection; implementation of recommendations and action plans adopted by the Global Conference on the Sustainable Development of Small Island Developing States held in Barbados in 1994 and the South Pacific Regional Environment Programme (SPREP), and ratification of international and regional conventions which address the causes of environmental degradation. The strategy would take account of action plans to be developed at the various workshops planned under the International Coral Reef Initiatives (ICRI). The emphasis would be on precautionary and anticipatory, instead of reactive and curative policies. Pollution control policies would emphasize waste minimization and prevention. Regional cooperation in combatting marine oil spills and conservation and management of marine species, especially marine mammals and their habitats will be enhanced.

For this purpose, emphasis will be laid on the following:

- (i) Training scientific and technical personnel to deal with various aspects of the coastal environment, including the development of management plans and their implementation;
- (ii) Preparing guidelines for reports on the state of the coastal and marine environment and for integrated management plans;
- (iii) Providing the needed technical assistance and hardware support particularly for monitoring and assessment;
- (iv) Supporting the United Nations Environment Programme (UNEP) Regional Seas Programme including the implementation of action plans for the South Asian Seas and East Asian Seas, elements of SPREP and the Northwest Pacific Action Plan.

Tangible results

1. National, subregional and regional assessment and databases on the state of the coastal and marine environment;
2. Improved legislative and institutional frameworks for coastal environmental management and coordination mechanisms at regional, subregional and national levels;
3. Integrated management plans that give importance to land-based pollution for the coastal areas and guidelines for their implementation;
4. Improved protection of vulnerable and critical ecosystems and better conservation of marine endangered species;

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5. Upgraded national capability including trained scientific and technical manpower and hardware support on coastal areas and marine science and technology;
6. Wider Ratification and observance of international and regional conventions on the coastal and marine environment;
7. Active implementation of the recommendations and action plans of the SPREP and the Barbados Conference;
8. Enhanced implementation of the UNEP Regional Seas Programme in the region;
9. Enhanced regional cooperation on combatting marine oil spills, and prevention of land based and shipborne pollution.

9. Desertification and land degradation

Programme rationale and description

Desertification is another area of concern and is defined as land degradation in arid, semi-arid and dry sub-humid areas from adverse human impacts. Population growth, the expansion of economic activities, deforestation, overuse and overgrazing have exerted unprecedented and unabated pressures on land and have turned many rangelands and croplands into degraded lands and deserts. If desertification is judged by its human dimensions, Asia and the Pacific is clearly the world's most seriously affected region, with problems of varying severity in arid and semi-arid zones and dry sub-humid areas.

The majority of the countries of the region have undergone extensive land degradation. The extent of degradation is very difficult to estimate, since it can be manifested in varying degrees, ranging from light to moderate to severe degradation. However, land degradation in some countries is of such immensity that up to 50 per cent of the total land is degraded, thus affecting the well-being of millions of people. Although land degradation can be the result of natural causes, it is intensified by human intervention such as inappropriate agricultural practices resulting in or contributing to nutrient depletion, structural decline and compaction, biological decline, chemical decline (acidification and salinity) and soil erosion.

Earlier increases in agricultural productivity have occurred in the region at a high environmental cost. During the last three decades, growth in food production was achieved primarily through intensification. Over-use or an unbalanced use of fertilizers, pesticides and application of other agro-chemicals has led to various health and environmental problems. Given the existing economic and demographic trends, and the rapid decline in arable land, the need for promoting efficient and balanced use of fertilizers and other inputs to sustain agricultural production, particularly in food crops to feed a growing population, will remain the central focus for some time to come. Drought has also had a serious impact on land resources and productivity.

Implementation strategy

Workshops and training courses on desertification will be organized to sensitize policy planners, resource managers, non-governmental organizations (NGOs) and special interest groups. Under the Regional Network of Research and Training Centres on Desertification Control in Asia and the Pacific (DESCONAP), research will be undertaken to stimulate action-oriented national programmes. While

implementing this programme area, the commission's resolution 51/12 on strengthening the regional network of research and training centres on desertification and land degradation control in Asia and the Pacific will be taken into consideration. Countries will be encouraged to review and assess the status of desertification and drought. Technical assistance and advisory services will be provided for national desertification control action plans and drought mitigation strategies. Cooperation among affected countries will be encouraged.

The action programme in the area of land degradation and agriculture will contain a wide range of actions, such as on food security, water and land productivity, agro-chemical management and research. An assessment of land degradation including the preparation of soil risk erosion maps at the national and regional levels will be carried out. Countries will be assisted in drawing up national plans and strategies to address land degradation and promote food security. The exchange of information and research results on proper irrigation techniques and pest management will be promoted. Countries will be encouraged, through seminars and training courses, to integrate environmental concerns into research on yield maximization. Guidelines on integrated land and water management will be widely disseminated and technical assistance will be provided to the Governments. Technical assistance will also be provided for policy reforms, including pricing policies for the effective and efficient management of land and water resources.

Tangible results

1. An assessment on the status of desertification at the national and regional levels;
2. An assessment of land degradation at the national and regional levels;
3. An assessment of drought at the national and regional levels;
4. National action plans for combating desertification and land degradation;
5. Information exchange, case-studies and demonstration projects on the improvement of land management and desertification control, including the improvement of water quality;
6. Promotion of environmentally sound agricultural development;
7. Policy reforms for effective land and water management.

10. Wetlands and lakes

Programme rationale and description

Wetlands and lakes contain important parts of Earth's biodiversity. Swamps, mangroves, marshes and other wetlands, once regarded as useless obstacles to development and often used as land-fill sites for reclamation as well as urban development, are now recognized for their rich biodiversity and valuable environmental functions, especially in recycling biological materials. Lakes play an important role as sources of fresh water and fish stocks and in maintaining the specific culture of the local communities. Wetlands and lakes, however, are receiving at an increasing rate pollution from human activities such as industrial effluents, and agricultural, urban and other run-offs and are threatened by overexploitation of water resources. The use of wetlands and lakes in an environmentally sound manner, therefore, is one of the main issues of sustainable development.

Implementation strategy

The existing regional inventory of wetlands and lakes to support action-oriented regional cooperation will be strengthened, making use of existing sources and mechanisms such as the regional efforts to promote the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention) and the UNEP International Environmental Technology Centre. Based on the inventory, conservation strategies in which adequate protected areas are identified will be developed for critical wetlands and lakes in this region. The regional network on information exchange will be strengthened and workshops and training courses organized to enhance national capacities for the management of lakes and wetlands. Community participation in the management of wetlands and lakes will be encouraged because the people in the areas receive immense benefits from, and mainly cause degradation to, these water bodies. Efforts will be made to promote the ratification of the Ramsar Convention.

Tangible results

1. Updated inventory of wetlands and lakes in the region;
2. Strengthened network for information exchange in the region;
3. Conservation strategies for critical wetlands and lakes;
4. Enhanced capacities for the management and environmentally sound use of wetlands and lakes;
5. Greater adherence to the Ramsar Convention;
6. Greater protection of migratory species of birds and other animals.

11. Integrated mountain development

Programme rationale and description

About 10 per cent of the Earth's population lives in mountain areas, while about 40 per cent occupies watershed areas. From the Andes to the Himalayas, and from South-East Asia to East and Central Africa, there has been serious ecological deterioration in these watersheds. Causes include deforestation, excessive livestock grazing, cultivation of marginal soils and inappropriate development interventions.

Mountains are important sources of water, energy, minerals, forest and agricultural products and areas of recreation. They are storehouses of biological diversity, home to endangered species and an essential part of the global ecosystem. The proper management of mountain resources and the socio-economic development of people need immediate action.

There is a need to develop land-use planning and management to mountain-fed watersheds to prevent soil erosion, increase the amount of tree and plant life, and maintain the ecological balance in the mountains. There is also a need to provide education, health care and energy, for local communities and indigenous people. The people also need more opportunities to earn livelihoods from such activities as sustainable tourism, fisheries, environmentally sound mining and cottage industries, such as the processing of medicinal and aromatic plants.

Implementation strategy

Chapter 13 "Managing fragile ecosystems: sustainable mountain development" of Agenda 21 has been recognized as a basic plan of action for mountainous areas by Governments and international agencies. Stronger efforts will be made to promote adequate recognition of mountain areas and the need for special development efforts in collaboration with Governments, international and regional agencies. A new and hard look is needed on the overall flow of resources and services to and from mountain areas, including soil, water, forests and range products, labour and government services etc. Of special interest to financing mountain development is the increasing recognition of the economic value of water resources. Support is needed for strengthening the global information network and database, including capacity-building and formulation of national programmes as outlined in the two programmes in chapter 13 of Agenda 21.

Tangible results

1. Improved knowledge and database on mountain peoples, environment and resources;
2. Strengthened network for information exchange and collaboration between different mountain areas of the world;
3. Promotion of soil erosion control measures and improvements in watershed management practices;
4. Protected areas to save wild genetic materials;
5. Realistic valuation of mountain resources;
6. Alternative livelihoods for mountain people that are economically and environmentally sound;
7. Mitigating measures for vulnerable groups and areas;
8. Promotion of sustainable mountain development skills, technologies and organizational capacities.

SUSTAINABLE DEVELOPMENT POLICY IMPROVEMENT

12. Implementation of the international environmental conventions and appropriate regional conventions

Programme rationale and description

More than 100 global, regional and subregional conventions and protocols relating to environmental protection are on the books. Their ratification and implementation by relevant Governments will make an outstanding contribution to the promotion of environmental quality and sustainable development. However, many countries in the region have yet to ratify or accede to even the most important international environmental conventions and protocols, largely owing to technical, administrative and financial constraints. It may be useful to identify and address these constraints with the view to encouraging the countries to ratify these conventions and protocols. Some of these conventions are as follows: (i) Convention on Biological Diversity, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on Wetlands of International Importance Especially as Waterfowl Habitat and Convention on Conservation of Migratory Species of Wild Fauna; (ii) Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; (iii) United Nations Framework Convention on Climate Change; (iv) Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete

the Ozone Layer and its 1990 amendment; (v) Important International Maritime Organization (IMO) conventions such as the International Convention for the Prevention of Pollution from Ships (MARPOL) 1973 and the International Convention on Oil Pollution Preparedness, Response and Cooperation; (vi) Convention Concerning the Protection of the World Cultural and Natural Heritage; (vii) United Nations Convention to Combat Desertification; (viii) ILO Chemicals Convention, 1990 and the Prevention of Major Industrial Accidents Convention, 1993; (ix) Other important conventions such as Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters, 1972. At the same time, there is scope for bilateral and subregional agreements, for example, on the conservation of migratory species of birds and other animals, transboundary and cross-border protected areas, coastal and marine environmental protection, prevention of oil pollution, and regulations on transboundary air pollution, and movement of hazardous wastes. The development of such bilateral and subregional agreement requires long and extensive negotiations as well as supportive technical and advisory services.

Implementation strategy

Efforts will be made to prepare monographs on the implications of the most important environmental conventions, identifying the benefits and constraints of ratification. Orientation courses will be organized for policy makers to sensitize them to the issues. Technical assistance and advisory services will be provided to Governments to draw up and implement management plans for the already ratified international conventions and protocols. In this context, developing countries will be provided with the requisite financial resources and technologies as indicated in Agenda 21. Efforts will be made to introduce the issues of international environmental conventions in university curriculums and course materials will be prepared accordingly. Appropriate project proposals for Global Environment Facility (GEF) funding will be prepared to encourage countries to ratify the major international conventions and protocols or to promote the adoption of regional conventions and protocols. Necessary technical and advisory services for bilateral and regional environmental agreements and conventions and protocols will be provided to interested countries, upon request. Efforts will be made to promote studies in universities and centres of higher learning on environmental laws and *inter alia* utilize and wherever appropriate strengthen the International Union for Conservation of Nature and Natural Resources (IUCN)/UNEP proposed regional centre of excellence in international environment law at the National University of Singapore, Singapore.

Tangible results

1. Enhanced and effective implementation of environment-related conventions and protocols in the region;
2. Wider acceptance of major international environmental conventions and protocols and preparation and implementation of related management plans;
3. Promotion of expertise and regional networks on international environmental law;
4. Promotion of regional and subregional environmental conventions, as necessary.

13. Institutions and legislation

Programme rationale and description

Effective implementation of sustainable development policies hinges, to a great extent, on the existence of an appropriate institutional and legislative framework. Tremendous progress has been made in the region in establishing institutional machinery for environmental protection and in enacting appropriate legislation for pollution control and natural resource management. However, there is still need for improvement. Weaknesses in the institutional and legal framework, in particular, enforcement mechanisms, overlapping of functional responsibilities and lack of coordination, are but some of the existing shortcomings. At the same time, with the evolution of the concept of sustainable development, there may be a need to review the functions of the institutional and legislative framework, with the view to redefining them, as necessary.

Implementation strategy

A regional mechanism for information exchange and cooperation using the sustainable development network of the United Nations Development Programme (UNDP) will be promoted. Case-studies will be conducted along with the provision of technical assistance and advisory services to the Governments to improve their institutional machinery and legal instruments. An assessment of institutions and legislation will be conducted to promote the strengthening of these machineries at the national level with particular emphasis on new and emerging issues such as the introduction of market-based economic instruments, decentralization of decision-making, and disposal of hazardous wastes. Appropriate mechanisms and guidelines will be developed to involve the local communities and interest groups in the decision-making process and in sharing information with the affected people. Efforts will be made to identify training requirements and facilities and encourage training in environmental management and laws and their enforcement. At the same time, more emphasis will be put on enforcement of and compliance with legal instruments. Governments will be encouraged to establish mechanisms to make sure that environmental concerns are effectively integrated in development activities, and all the policies and institutional goals are pursued in harmony with the objective of sustainable development.

Tangible results

1. An assessment of the evolution of institutions and legislation in the region with the introduction of a regional mechanism for their strengthening;
2. Increased effectiveness of the institutional and legislative framework for environment and sustainable development with better enforcement of environmental laws;
3. Greater involvement of local communities and affected people in the decision-making process and a better flow of information on environmental impacts;
4. Increased training opportunities for environmental lawyers and resource managers in environmental law and its enforcement.

14. Environmental standards

Programme rationale and description

One of the most effective ways of containing pollution and improving environmental quality is to establish environmental quality standards and emission standards at the national level keeping in view of the conditions, carrying capacities and levels of economic and social development in different countries. Measures for adherence to these standards then need to be undertaken. Many Governments in the region have set such environmental standards and have implemented programmes for pollution control. However, several countries have not yet set environmental quality standards and emissions standards, let alone enforcement mechanisms. This programme area cuts across a number of sectors such as agriculture, industry and manufacturing, energy, health and urban development. Ameliorating measures may focus on containing environmental pollution and improving the efficiency of resource use in these sectors, resulting in improved health and a better quality of life for the people in the region.

Implementation strategy

Environmental quality standards and emission standards adopted by different countries in the region will be compiled and analysed bearing in mind the principle 11 of the Rio Declaration. The countries which have yet to establish such environmental standards will be encouraged to adopt appropriate environmental quality and emission standards for which technical assistance and advisory services will be provided. Countries would also be encouraged to establish environmental quality objectives including those for specific critical areas and technical assistance will be provided for the preparation of action plans and their implementation. Training workshops, technical assistance and advisory services on the formulation of environmental quality standards and enforcement of emission standards will be promoted. The strategy for the attainment of such standards will *inter alia* include the use of economic instruments suited to country specific conditions.

Tangible results

1. An assessment of the status of environmental quality standards and emission standards;
2. Establishment of environmental quality standards and emission standards in countries which have not yet formulated such standards;
3. Better enforcement of pollution emission standards to attain environmental quality objectives through action plans.

15. Environmental impact and risk assessment and environmental audit

Programme rationale and description

The need to integrate environmental and developmental decision-making processes has been recognized as contributing to economically efficient, socially equitable and responsible environmental management. This implies that the development plans, policies and programmes should provide for the following elements:

- (a) The integration of economic, social and environmental considerations;

- (b) A long-term perspective and cross-sectoral approaches taking account of the linkages between political, economic, social and environmental issues;
- (c) Monitoring and evaluation of the development process and regular reviews of, among other things, the state of the environment and natural resources.

The achievement of the above objectives has to stand on three main pillars:

- (a) Environmental impact assessment (EIA) and environmental health impact assessment (EHIA) of strategic policies and development programmes and projects which enable the compilation of information regarding activities which have an adverse effect on the environment or on human health, and the preparation of action plans to protect the environment;
- (b) Environmental risk assessment (ERA) of industrial units which enables a comprehensive assessment of risk and the preparation of action plans for remedial measures;
- (c) Environmental audit (EA) of operational industrial units which enables the enterprise to increase efficiency in the use of energy and resources, reduce waste, save costs, and prepare plans for dealing with emergencies etc.

Implementation strategy

The implementation strategy would consist of:

- (a) Promoting an institutional and legal framework to carry out environmental impact assessment, environmental risk assessment and environmental audit;
- (b) Developing guidelines on strategic environmental analysis environmental impact assessment, environmental risk assessment and environmental audit for policies, programmes, and projects;
- (c) Training scientific and technical personnel in government, environmental protection authorities and industry;
- (d) Providing technical assistance and hardware for these assessments and audit;
- (e) Encouraging intercountry cooperation and financing to deal with environmental disasters and accidents and promoting national, sub-regional and regional emergency preparedness and response mechanisms;
- (f) Encouraging conduct of environmental impact assessments of national programmes and projects and transnational projects such as transport corridors, triangular or quadrangular tourism promotion or industrial development schemes;
- (g) Conducting case-studies on the application, EIA, ERA and EA for selected projects and industries;
- (h) Dissemination of country EIA experiences and harmonization of EIA procedures at the subregional level, as appropriate.

Tangible results

1. Strengthened institutional and legal framework for environmental impact assessment, environmental risks assessment and environmental audit;
2. Programme providing for the increased introduction of EIA, ERA, and EA for prescribed categories of programmes, projects and industries;
3. Increased awareness of industrial risks with action plans to deal with emergencies arising out of accidents;
4. Strengthened national capacity for environmental disasters and accident preparedness and for undertaking contingency measures.

16. Use of economic instruments

Programme rationale and description

Command and control approach has been the traditional method for Governments to achieve environmental and social development objectives. However, increasing attention has been given to the use of economic instruments including price reforms which promote sustainable development by giving incentives for arresting environmental degradation as well as imposing immediate penalties for causing it taking cognizance of development priorities and special circumstances of the developing countries. As part of this policy, the social cost of environmental degradation, resource pricing and internalization of environmental costs in the projects and the Polluter Pays Principle should be promoted as appropriate.

Implementation strategy

A review on the use of economic instruments and pricing reforms for environment and sustainable development purposes, keeping in view the special circumstances and development priorities of the developing countries, will be undertaken and regional guidelines on the use of economic instruments will be prepared. These guidelines will be widely disseminated not only to government agencies but also to the private sector, NGOs, research groups and others. Training workshops will be organized for legislators, policy makers, resource managers, private sector and NGOs. Public awareness programmes will also be organized. Technical assistance and advisory services, especially through regional and national level training, will be provided on the use of economic instruments and economic reforms.

Tangible results

1. An assessment of the actual and potential use of economic instruments and pricing reforms on the environment and sustainable development efforts in the region;
2. Increased national capacity for the application of economic instruments;
3. Inclusion of resource pricing in economic activities and operationalization of the Polluter Pays Principle.

17. Mutually supportive trade and environment policies

Programme rationale and description

The region is characterized by remarkable economic development generally through export-led growth. Environment and trade policies should be mutually supportive in a manner that contributes to sustained economic growth. The major issues in environment and trade are (a) competitiveness - environmental regulations affect production costs and the volume and pattern of international trading especially for important export sectors; (b) environmentally related product standards which may limit market access, increase costs and act as non-tariff trade barriers; (c) increased use of trade measures to secure international environmental objectives, particularly in international environmental agreements that incorporate trade restrictions such as the Basel Convention, CITES and Montreal protocols; (d) the impact of trade and trade liberalization on environment and natural resources; (e) ecolabelling and conformity assessments, green products and green trade. All the above issues may have far-reaching impacts on the region. Some of the above issues have already been studied by various national and international institutions. It may be important to strengthen such studies in the regional context so that countries may be able to identify issues of relevance for enhanced and more effective participation in international trade negotiations and to cope with the shifting patterns of comparative advantage and specialization.

Implementation strategy

Greater awareness and understanding of mutually supportive trade and environment regimes will be fostered and research capabilities in the formulation of trade policy for sustainable development will be enhanced. Studies will be undertaken on commercial opportunities arising from issues related to "green" trade which term shall not be used as a disguised barrier to international trade. Technical assistance and advisory services will be provided on ecolabelling and other conformity assessment schemes.

In addition, regional and country studies will be undertaken to clarify the linkage between environment, trade and development. These studies will assess the implications of new institutional developments at the global and regional levels, such as the North American Free Trade Agreement (NAFTA), the European Union (EU), the Asia-Pacific Economic Cooperation (APEC) and the ASEAN Free Trade Area (AFTA), the Uruguay Round agreements etc. The studies will also examine the extent to which environment protection measures are being used as non-tariff measures, and their implications for the sustainable development of the region. It will further examine the various requirements relating to products for environmental purposes such as regulations, standards, use of products, processes and production methods (PPMs) etc. and their relationship with trade and the effect of such environmental measures on market access. Products which are important foreign exchange earners for the Asian and Pacific region and which are at the same time environmentally sensitive and natural resource intensive sectors, such as wood-based products, will be examined in greater detail. Capacity-building in these areas will be given priority. The findings of these studies will be disseminated to policy makers, programme managers and business communities, through workshops and training courses.

Tangible results

1. An assessment of the prospects of green trade and related commercial opportunities;
2. Enhanced mutually supportive trade and environment policies and green trade in the region;
3. A better understanding of trade and environment issues keeping in view relevant efforts at the global level;
4. Studies to promote competitiveness on environmentally sensitive commodities;
5. Studies on environment, trade and sustainable development, particularly the implications of AFTA, SAPTA, NAFTA and APEC on trade in the region;
6. Enhanced national capacities and human resources development to deal with the implication of environmental issues as non-tariff barriers;
7. Regional assessment of shifting patterns of comparative advantage and specialization.

18. Natural resource accounting

Programme rationale and description

Current efforts at the national level on environmental management and practical methodologies for promoting sustainable development have not been extensively researched, disseminated and operationalized. There is an immediate need to undertake this task in specific and important areas. Thus, it would be fruitful to undertake research on future paths of consumption patterns that could describe and elaborate the various alternatives that would or could be available. Another aspect of future consumption patterns is the possibility that the pursuit of the current unsustainable consumption pattern or path would lead to some perceived impending global crisis such as might result from a continuation of such consumption patterns.

Further, conventional national accounts prepared by the countries do not presently cover the crucial role of environment as a source of national capital and as a sink for by-products generated for economic and human activities. The treatment of environmental issues in the national accounting framework has been undertaken by several countries and the United Nations Statistical Division. The 1993 SNA devotes a separate section to integrated environmental - economic satellite accounts and introduces refinements into the cost, capital and valuation concepts of the central framework that deal with natural assets.¹ Apart from the need for further work on appropriate valuation techniques, it has now been recognized that even when a well developed framework for natural resource accounting is available, its appropriateness and adaptation in the developing countries would need to be examined. This would involve case-studies at the national level on the evaluation of natural assets as well as methodologies for incorporating environmental and natural resource impacts.

Implementation strategy

Case-studies on sustainable consumption patterns, alternate energy mixes and transport systems and the integrated provision of environmental infrastructure for water, sanitation, drainage and solid waste management for sustainable development will be promoted. The endogenous capacities of relevant national agencies will be enhanced through training courses, technical assistance and advisory services for the operationalization of these guidelines.

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¹ *Integrated Environmental and Economic Accounting* (United Nations publication, Sales No. E.93.XVII.12).

A status report on the development of a natural resource accounting system will be prepared. Pilot studies on testing the methodology presented in the framework for selected natural resources of major concern will be promoted. The results of these studies would be utilized to develop an appropriate resource accounting procedure in the region compatible with international efforts.

Tangible results

1. Methodology for the integration of natural resource accounting into the system of national accounts with pilot studies;
2. Enhanced national capacities on the application of natural resource accounting;
3. Programme for the exchange of scientists, economists and resource managers for the promotion of natural resource accounting;
4. Better evaluation of natural assets as well as non-market sector contributions;
5. Case-studies on sustainable consumption patterns, particularly on alternative energy mixes, transport systems and environmental infrastructure.

19. Combating poverty to achieve sustainable development

Programme rationale and description

While managing resources sustainably, an environmental policy that focuses mainly on the conservation and protection of resources must take due account of those who depend on the resources for their livelihoods. Otherwise it could have an adverse impact both on poverty and on chances for long-term success in resource and environmental conservation. Equally, a development policy that focuses mainly on increasing the production of goods without addressing the sustainability of the resources on which production is based will sooner or later run into declining productivity, which could also have an adverse impact on poverty. A specific anti-poverty strategy is therefore one of the basic conditions for ensuring sustainable development. An effective strategy for tackling the problems of poverty, development and environment simultaneously should begin by focusing on resources, production and people and should cover demographic issues, enhanced health care and education, the rights of women, the role of youth and of indigenous people and local communities and democratic participation process in association with improved governance.

Despite the long period of high economic growth in the Asian and Pacific region, poverty continues to increase. While the largest concentrations are in South Asia and Indo-China, persistent pockets remain in other countries as well. In addition, while the percentage of poor people appears to be declining, the absolute number appears to increase in many countries. Poverty is highly correlated with marginalization, vulnerability, powerlessness, isolation and other economic, political, social and cultural dimensions of deprivation. In addition to low income, poverty is reflected in malnutrition, poor health, low literacy levels, inadequate housing and living conditions, and limited or no access to basic infrastructure or services. It is further compounded by lack of access to land, credit, technology and other productive assets, infrastructure and services needed to generate income. If poverty is to be alleviated, all these issues need to be addressed. Integral to such action is, together with international support, the promotion of sustained economic growth.

Implementation strategy

Economic growth, social development and poverty eradication are overriding priorities in developing countries and are essential to meeting national, regional and global objectives of environmental protection and sustainable development. Unsustainable population growth impinges adversely not only on rapid economic growth but also on poverty. It will therefore be necessary to integrate poverty alleviation, population and environmental improvement programmes specifically in the strategies of economic growth *inter alia* in accordance with the recommendations of the International Conference on Population and Development held at Cairo in 1994. An integrated programme of rural development will be promoted as part of such a strategy as the bulk of the poor live in the rural areas. Since urban poverty is also a serious problem, an effort will be initiated to address this issue through cross-sectoral urban environmental enhancement efforts. Further, poverty alleviation efforts will be accompanied by a programme of human resource development including enhanced access to environmental technology and information. In a nutshell, environmental conservation and management will form an integral part of the poverty alleviation programmes which will include enhancement of environment and natural resource endowments, the meeting of minimum subsistence needs, protection of the rights of the poor to natural resources and limitation on the non-subsistence uses of those resources.

The relationship of poverty, population and environmental degradation and the support systems needed for the poor to enhance environmental conservation efforts within their realm will be studied. These studies will also include the most effective and efficient ways of delivering basic social, economic and environmental services including shelter, fuel, food, fodder, education, health and family welfare and access to land, credit, technology and markets. They would also aim at the protection and regeneration of natural resources in areas where most of the poor live, and the promotion of their effective participation in designing, implementing and monitoring programmes. Local-level community organizations will be promoted and empowered, and wherever necessary, strengthened to ensure effective conservation and management of the environment and natural resource endowments. Efforts will also be made to involve all social and political actors including Governments, trade unions and cooperatives, business leaders, voluntary organizations and NGOs, research and policy institutes, educational groups and community organizations. Studies will be undertaken to understand clearly how different actors can contribute to poverty alleviation efforts through environmental improvement programmes and to what extent and under what circumstances these actors are capable of serving as planners and coordinators, implementors, or facilitators of the programme.

Tangible results

1. Improved and integrated plans for environmental conservation, population control, agriculture and rural development and poverty alleviation in areas where poverty is rampant;
2. Enhanced access and greater empowerment of the poor to manage natural resources, infrastructure and services for environmental improvement;
3. Strengthened local-level, decentralized community organizations to protect the environment and natural resources, poverty alleviation programmes, and the enhanced mobilization of the poor in environmental conservation, monitoring and management processes;

4. Greater involvement of different actors, including NGOs, mass media, research and policy institutes, the private sector and other groups in poverty alleviation and environmental enhancement programmes.

20. National strategies and action plans

Programme rationale and description

Many Governments have already prepared national Agenda 21 or national strategies or plans to pursue sustainable development in their countries. In many cases, these strategies predate the 1992 United Nations Conference on Environment and Development and do not incorporate the recommendations of Agenda 21. Technical assistance and support will be required to complete these tasks. It is also necessary to build consensus on major environment and development issues in cooperation with and support from all the major groups. Women, youth, indigenous communities, NGOs, the private sector, and other interest groups should be actively involved in the development and implementation of national strategies and action plans.

Implementation strategy

A review will be undertaken primarily by member and associate member states themselves on the preparations for and updating of national Agenda 21, national strategies and action plans, and the involvement of major groups in their preparation and the consequent technical assistance needed. Efforts will be made to mobilize funding and other support for the implementation of national strategies and action plans. Public participation and utilization of existing NGO networks in the implementation of national strategies and national Agenda 21 is one of the most important elements and will be encouraged. Local bodies will be encouraged to draft and implement their programmes in line with national Agenda 21.

Tangible results

1. An assessment of the status of the implementation and review of national strategies;
2. An assessment of the technical assistance requirements for the development, implementation and review of Agenda 21;
3. Improved consensus and strengthened coordination on the national strategies and plans;
4. Enhancement of funding and other support for the implementation of national strategies and action plans;
5. Enhanced public participation in the implementation of national strategies and action plans;
6. Preparation and implementation of sustainable development programmes by a few local bodies;
7. Enhanced integration of environmental concerns in economic and social development, master plans and other sectoral master plans.

21. Environmental education, public awareness and training

Programme rationale and description

Environmental education, awareness and training on integrating environment and development concerns are essential for achieving sustainability, and thus are relevant for all peoples. Environmental programmes of Asia and the Pacific should, therefore, include these aspects, for the simple reason that the content related to environment care and management cuts across the whole curriculum and the

people's way of life. The critical issue, however, is how to communicate information and knowledge and therefore adopt appropriate actions in order to achieve the desired goals. While some progress to enhance education and awareness has been achieved, further efforts should be made to develop education, training and information activities which emphasize context-specific, problem-solving approaches and actions. The focus should be on sustainable development taking into account the importance of human dignity, in improving the quality of life and of the environment, while promoting a culture of peace, solidarity and international understanding; the diversity of life and the balance between reasonable human activities and the need to preserve natural ecosystems; and building human capacities, promoting participation and cooperation among people and institutions.

Implementation strategy

A significant amount of work in environmental education is taking place in the ESCAP region. Numerous reference and resource materials, curriculum structures, learning sequences and corresponding training outlines are available. The materials are directed to different groups, for example, schoolchildren, teachers, university students and lecturers, organizers of non-formal environmental education activities, various government officials, government planners, engineers, industrial managers and the general public. The exchange of information and experiences between environmentalists and experts has also been encouraged. What is missing, however, is still the commitment to concrete action, using culturally acceptable modalities.

The implementation strategies, therefore, should be to continue the programmes and activities that have been initiated, consolidating them into an environmental education plan focusing on intervention in the environment for its improvement and protection. Awareness creation programmes for all individuals and groups will have to be intensified using both traditional and modern communication technology. Regional cooperation and collaboration through networking should be strengthened as environmental problems transcend national boundaries. Exchange and sharing of information and experiences through publications and newsletters using various communication channels should be encouraged. The provision of fellowships and scholarships will be strengthened.

Tangible results

1. Refined, re-oriented, integrated, action-oriented, context-specific, culturally acceptable education, training and information programmes and materials, including environmental education plans;
2. A series of demonstration programmes and action frameworks for various target groups;
3. Enhanced capacities of member States in developing education and training approaches, programmes and materials;
4. Mobilized support of decision makers and opinion leaders;
5. Strengthened cooperation and collaboration with the media, NGOs, as well as government agencies with regard to the dissemination of materials and promotion of environmental campaigns through the use of various forms of popular culture such as folk music, dance, theatre etc.;
6. Improved curriculum for school and out-of-school programmes at primary, secondary and tertiary, levels.

22. Sustainable development indicators

Programme rationale and description

To make economic growth sustainable, it is necessary to make economic development more compatible with environmental protection goals. It implies that the sustainable development indicators and the environment and the environment-related statistics from which they are derived should be developed to monitor the trends of the environment and natural resource degradation resulting from unsustainable patterns of production and consumption. Agenda 21 has accordingly recommended that the sustainable development indicators may be elaborated on a sectoral basis and then be aggregated. Furthermore, the harmonized development of indicators should be undertaken at national, regional and global levels. Sustainable development indicators should *inter alia* be able to gauge the changes in the quality of life in terms of life expectancy; health-care facilities; literacy changes and educational facilities, as well as income changes such as per capita gross domestic product (GDP). The indicators should be quantitative and some at least should be convertible to a monetary value so that they can be related to the national accounts. In defining sustainable development indicators, due consideration needs to be accorded to factors such as simplicity, measurability, monitoring, timeliness and sensitivity, keeping in view national sovereignty considerations, practicability and acceptability. The set of indicators will be coordinated and developed with ongoing efforts.

It is expected that these indicators will be under constant review and will be modified, as necessary, in order to increase their precision. Since the concept of development indicators is new, relevant guidelines, training and technical assistance are necessary for their propagation.

Implementation strategy

Environment and related statistics need to be made increasingly available as a result of the regular data-collecting activities of the countries, if indicators of environment and sustainable development are to be properly developed. Based on the recommendations of the Commission on Sustainable Development and the United Nations Statistical Division, specific studies on the harmonized development of regional and national indicators of sustainable development will be undertaken and discussed in expert group and intergovernmental meetings. These studies will take into account ongoing work based on a core compilation of environmental indicators by the Intergovernmental Working Group on the Advancement of Environment Statistics, along with related regional work. Manuals and guidelines on national sustainable development indicators and methodologies of their review will be developed and widely disseminated through national and regional training workshops to familiarize national experts with their precise application. Accordingly, the results of monitoring sustainable development through indicators undertaken by the Governments could be periodically reviewed to improve the policy framework.

Tangible results

1. Enhanced national data-collection mechanisms for environment and related statistics;
2. Appropriate sets of national and regional sustainable development indicators;
3. Guidelines on monitoring and assessment of sustainable development indicators;
4. Enhanced human resources capability and expertise to collate sustainable development indicators;

5. National, subregional and regional assessment of the state of the environment and sustainable development;

23. Environment and natural resource monitoring and assessment

Programme rationale and description

For informed decision-making and environmentally sound and sustainable development, information on environmental quality, the extent of natural resource endowment and its degradation is a prerequisite. Developmental activities that do not consider their impact on the natural resources pose a serious threat. Some of the important elements of monitoring and assessment are:

1. Monitoring and assessment of land use and land degradation;
2. Pollution caused by human waste, solid waste, industrial effluent and hazardous and toxic substances;
3. Quality and quantity of ground and surface water;
4. Coastal and marine resources;
5. Forest cover;
6. Biodiversity;
7. Systematic ecological surveys of flora and fauna;
8. Sea-level rise and climate change.

Implementation strategy

The strategy would involve identification of the interests and needs of member countries in specific issues of environment and natural resources. This will include data gaps, parameters to be monitored, criteria for monitoring and assessment techniques, technology available, human resources requirements, including training and equipment support. The main activity in this programme area will consist of providing technical assistance for the preparation and implementation of projects, and wherever possible, of providing financial assistance for projects. Existing regional networks such as the environmental assessment programme of UNEP and subregional networks being implemented through the subregional environment programmes and international organizations (ASEAN Senior Officials on the Environment (ASOEN), Mekong River Commission, South Asian Cooperative Environment Programme (SACEP), South Pacific Regional Environment Programme (SPREP) and the International Centre for Integrated Mountain Development (ICIMOD) will be utilized to the extent feasible.

Tangible results

1. A country-wise assessment of knowledge gaps in monitoring, assessment capability and hardware ability;
2. Improved national capacities and trained key scientific and technical personnel on environmental monitoring and assessment;
3. Improved linkage of national databases with regional and international databases;
4. Enhanced international comparability including calibration, standardization and compatibility with existing international and national databases;

5. Increased hardware support for monitoring and assessment;
6. Strengthened regional environmental and sustainable development information centres, networks for monitoring, data sharing and exchange and centres of excellence for environmental R&D.

24. Reporting on sustainable development

Programme rationale and description

The national Governments have been requested to submit national reports and periodic communications on sustainable development to the Commission on Sustainable Development and are required to do so by other organizations, from time to time. The Commission has prepared guidelines for country reporting which are being reviewed and simplified with the assistance of task managers from various organizations as well as the bureau of the Commission responsible for different chapters of Agenda 21. Technical assistance will be required for the preparation of these reports on cross-sectoral and sectoral clusters of Agenda 21.

Implementation strategy

Technical assistance and advisory services will be provided to the countries requiring support for the preparation of national reports and periodic communications and for the presentation of national reports to the special session of United Nations General Assembly. A comprehensive report will be prepared for submission to the Commission on Sustainable Development which will highlight the technical assistance and capacity-building needs for the implementation of Agenda 21 at the national and regional levels, financial and technical support under existing programmes, and additional resource requirements. A regional report on the implementation of Agenda 21 will be prepared for submission to the General Assembly for presentation at its special session in 1997.

Tangible results

1. National reports on the implementation of Agenda 21 and the regional action programme;
2. Improved national capacities and human resources for the reporting requirements of the Commission on Sustainable Development and the General Assembly;
3. A report on the capacity-building needs for the implementation of Agenda 21 at the national and regional levels;
4. Regional and subregional reports on the implementation of Agenda 21 and the regional action programme.

II. IMPLEMENTATION AND FOLLOW-UP

Responsibility for implementation

The major role for ensuring the implementation of the regional action programme lies with national Governments, individually and collectively taking into account Agenda 21. However, the active cooperation and participation of international and regional agencies and bodies and multilateral financial institutions is a prerequisite for its successful implementation.

Development of projects

The regional action programme will be transformed into concrete project proposals containing specific budgets and time-frames for implementation. The international, regional and subregional bodies and agencies and multilateral financial institutions are requested to participate fully in this process.

Specific projects will be formulated for a cluster of members and associate members keeping in view the severity and commonality of problems, natural resource endowments, levels of economic development and technology and institutional capacities for implementation. Country clusters need not necessarily be contiguous to each other or in any subregional groupings of countries. Activities will be selected as a result of an active consultative process involving the members and associate members that have an interest in participating in the projects.

Concerned international and regional bodies and agencies, and multilateral financial institutions, wherever feasible or appropriate, will be encouraged to incorporate into their regional projects the relevant elements of the regional action programme. Efforts by international agencies and multilateral financial institutions for the implementation of Agenda 21 may be linked and coordinated, wherever appropriate, while formulating new projects. Efforts will be made to develop a data bank for such projects.

A number of regional networks promoted by the ESCAP secretariat and other international agencies are active in the region. These networks will be utilized for the development and implementation of the programme, as appropriate.

Science and environmentally sound technologies

As a sound base of science and technology is an essential element for the implementation of the regional action programme and sustainable development, efforts will be made to promote science and facilitate access to and transfer of environmentally sound technologies. For this purpose, existing regional centres such as the Asian and Pacific Centre for Transfer of Technology (APCTT) will be fully utilized and emphasis will be given to:

- (i) Enabling scientists in member countries to participate fully in programmes dealing with the problems of environment and development;
- (ii) Promoting the identification of research needs and priorities and arranging support;
- (iii) Promoting regional clearing-house mechanisms and information networks on environmentally sound technologies to facilitate the transfer of technology;
- (iv) Promoting endogenous capacity-building through human resources development on technology assessment, its absorption and development;
- (v) Promoting private sector participation in research and development and in facilitating access to and transfer of environmentally sound technologies;
- (vi) Promoting clean technology exhibitions.

Financial mechanism and resources

In implementing the regional action programme, the national Governments will mobilize domestic resources from all possible sources, according to their capacities, taking into account chapter 33 of Agenda 21.

The United Nations bodies and agencies and multilateral financial institutions should, to the fullest extent possible, provide financial support for the implementation of the regional action programme. Financial support is requested from countries, and also from donor agencies, organizations and NGOs. The Asian Development Bank, being the most important multilateral financial institution in the region, is invited to assist the implementation of the regional action programme through technical assistance and concessional funding. UNDP is requested to take a leading role in capacity-building and provide funding support.

Efforts will be made to work towards promoting, when necessary, the establishment of a regional funding mechanism, to supplement existing funding sources which would invite funding support from different Governments, donors, and NGOs in the form of a trust fund to facilitate the implementation of the Regional Action Programme for environmentally Sound and Sustainable Development, 1996-2000.

Coordination, monitoring and review

The members and associate members of ESCAP will periodically monitor and review the implementation of the regional action programme. This task may be entrusted to the Committee on Environment and Sustainable Development. The Executive Secretary is requested to report the progress made in its implementation to the annual sessions of the Commission.

The Inter-agency Committee on Environment and Sustainable Development in Asia and the Pacific will be responsible for the coordination, joint programming wherever appropriate, monitoring and review of the execution of the regional action programme. Individual members of the Committee may act as coordinators for specific programme areas to support efforts in information exchange, development of databases, capacity-building and reporting.

However, in-depth assessment of the progress, together with implementation constraints at national and regional levels, will require institutional participation from the countries.

There is also a need for enhanced inter-agency and interministerial coordination and cooperation at the national level to take full benefit from the implementation of the regional action programme. The members and associate members of ESCAP are encouraged to establish appropriate mechanisms for this purpose and take effective part in the implementation of the regional action programme. They may also designate a focal point to facilitate communication and coordinate the participation of national institutions in the regional action programme.

Involvement of NGOs, private sector and other major groups

The NGOs, private sector and other interest groups will be actively involved in the development and implementation of the projects under the regional action programme. They will be encouraged to identify areas of interest and develop projects for implementation. They may also be associated with the review and implementation of the regional action programme. Suitable mechanisms for the involvement of major groups for the development and implementation of projects under the regional action programme will be devised.

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Annex II

DRAFT MINISTERIAL DECLARATION ON ENVIRONMENTALLY SOUND AND SUSTAINABLE DEVELOPMENT IN ASIA AND THE PACIFIC

We, the Ministers of the members and associate members of the Economic and Social Commission for Asia and Pacific (ESCAP) having met at Bangkok from 27 to 28 November 1995 at the third Ministerial Conference on Environment and Development in Asia and the Pacific;

Rededicating and renewing our commitment to Rio Declaration on Environment and Development and the provisions of Agenda 21; as well as the Ministerial Declarations on Environment and Development in Asia and the Pacific of 1985 and 1990;

Convinced that economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development which is the framework for our efforts to advance a higher quality of life for our people;

Subscribing in particular to the principles in the Rio Declaration that States have the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States; that the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations; that States should cooperate in eradicating poverty as an indispensable requirement for sustainable development; that States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies; that States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries; that States should widely apply, wherever appropriate, a precautionary approach; and that States should immediately notify other States of any natural disasters or other emergencies that are likely to affect the environment of those States;

Being aware of the diversity of the economy, culture and natural resource endowments of the countries of Asia and the Pacific which contain a greater part of the tropical, boreal and taiga forests, one third of world's mangroves, large oceans with immense marine resources, two thirds of the world's coral reefs, a region richly endowed with biodiversity resources and extensive deserts, mountain ranges, numerous lakes, rivers and estuaries supporting a variety of unique ecosystems in the region;

Recognizing that the pressure of population in Asia and the Pacific is the highest in the world with 58 per cent of the world's population living on 23 per cent of the world's total land area; that there is abject poverty affecting large numbers of the people living in the region ; that the diverse ecosystems of the region are not only fragile but also highly vulnerable; that the high economic growth rates achieved in the last decade in certain parts of the region have had some adverse impacts on the environment; that poverty and unsustainable patterns of consumption and production have contributed to environmental degradation; that the urban population in the Asian and Pacific region which was only

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30 per cent of the total population of the region in 1990 is currently projected to increase to 55 per cent by 2020, overloading urban infrastructure and exacerbating the problems of pollution, shelter, nutrition, health and sanitation;

Acknowledging that following the 1990 Ministerial-level Conference on Environment and Development in Asia and the Pacific, many countries in the region have achieved significant progress in the pursuit of environmentally sound and sustainable development, notable achievements being: strengthening environmental laws and policies, promoting greater accountability and transparency for improved decision making, making efforts at capacity-building of institutions tasked to oversee environmental management and formulating national conservation strategies and national Agenda 21; intensifying afforestation and reforestation efforts in the countries, increasing activities in the conservation of biodiversity by declaring new protected areas, river revival programmes, coastal rehabilitation and some policy initiatives in curbing air and water pollution; expanding the participation of non-governmental organizations, business, women, youth and other major groups and pursuing other activities that would arrest environmental degradation;

Noting that there is a serious threat to environmentally sound and sustainable development in Asia and the Pacific, as highlighted by the 1995 report on the state of the environment in Asia and the Pacific, which indicates the extent of the reduction of forest cover, desertification, loss of biodiversity, soil erosion, degradation and depletion of fresh water resources, pollution of seas and deformation of morphology of nearshore areas that contribute to the degradation of the coastal and marine resources, including mangroves, coral reefs and fish stocks, air and water pollution, degradation of mountain resources, ozone layer depletion, climate change and the potential rise in sea level;

Acknowledging that many of the developing countries and the economies in transition of the region lack adequate finances, necessary technologies and the required human resources to develop and effectively implement environmental protection and management programmes; that there is an urgent need for the transfer of environmentally sound technology on favourable terms as well as preferential and concessional terms to be mutually agreed to by the developing countries of the region, including the least developed and land-locked countries, the small island developing States and the economies in transition; that there is a need to enhance endogenous capacity-building to assess, adopt, manage and apply environmentally sound technologies;

Noting with concern the inadequate financial resources for implementing programmes and projects for environmentally sound and sustainable development in Asia and the Pacific and that the flow of official development assistance into the region continues to be far below the level expected at the Earth Summit; that the Global Environment Facility replenishment, which is a welcome move, is however insufficient and restricted to selected areas of global environmental concern and therefore further improvement and enhancement are expected;

Welcoming the positive steps taken by members and associate members of ESCAP and the assistance rendered by United Nations bodies, multilateral financing institutions including the Asian Development Bank and other intergovernmental organizations, in the fields of environmental legislation, public awareness, education, research and training, disaster management, hazardous waste management, deforestation and desertification, protection of the marine and mountain environment, improved air and water quality, and the promotion of sustainable policies on combatting poverty, the protection of the ozone layer, protected areas, natural heritage sites, population and health;

Reiterating the will and the determination of the people and the Governments of the Asian and Pacific region to mobilize individually and collectively all the resources of the region and embark on a concerted effort to achieve environmentally sound and sustainable development in the shortest possible time;

1. *Commit* to the development, application, implementation and integration of nationally determined policies on population management, protection of human health, poverty alleviation, environmental management and the rational harnessing of resources as essential prerequisites for environmentally sound and sustainable development at the national level; take steps to integrate environmental protection and management into the development process; promote greater regional and subregional cooperation in all spheres of environment and development; further promote public awareness, strengthen environmental education and the involvement of non-governmental organizations; obtain the optimum participation of the people, particularly women, youth and children, indigenous communities and other concerned organizations, local authorities and the private sector in the protection environment and the promotion of sustainable development in the region;

2. *Emphasize* that trade and environment policies should be mutually supportive in a manner that contribute to sustained economic growth and stress that trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade;

3. *Resolve* to further implement Agenda 21, the Programme of Action for the Sustainable Development of small island developing States, the Regional Strategy on Environmentally Sound and Sustainable Development and the Framework of Action for Sustainable Development in Asia and the Pacific and actively promote and facilitate the formulation and implementation of national strategies, national environmental action plans, national conservation strategies and national environmental management plans with special consideration to the land-locked and least developed countries and the economies in transition;

4. *Adopt* the regional action programme for environmentally sound and sustainable development as a rational and viable instrument for achieving the common goal of environmentally sound and sustainable development in Asia and the Pacific; and decide to take steps to implement it and to strengthen the institutional framework and promote capacity-building at the regional, subregional and national levels for the purpose;

5. *Request* members and associate members of ESCAP, donor countries, all the relevant United Nations bodies, multilateral financing institutions, other intergovernmental organizations, private sector and non-governmental organizations to provide adequate financial resources for the implementation of the regional action programme and subregional and national action plans;

6. *Resolve* to initiate processes to develop modalities and mechanisms involving governments and the private sector for the transfer, by the developed countries to the developing countries and the economies in transition of environmentally sound technologies, especially state of the art technologies, on favourable terms as well as preferential and concessional terms, including the promotion and support for developing environmentally sound endogenous technologies;

7. *Urge* developed countries to provide substantial new and additional financial resources, in line with the reaffirmation made at the Earth Summit concerning of the commitment to reach the target of 0.7 per cent of gross national product for official development assistance, as early as possible, for sustainable development and implementation of Agenda 21 by developing countries and in particular for the regional action programme and support early replenishment of concessional funds in the multinational financial institutions such as the International Development Association and the Asian Development Fund;

8. *Decide* to make efforts for establishing a regional funding mechanism, when necessary, to supplement existing funding sources in the form of a trust fund, for the implementation of the Regional Action Programme for Environmentally Sound and Sustainable Development, 1996-2000;

[9. *Urge* States involved in nuclear testing to take note of the strong concern in the region over the impacts of nuclear testing on the environment, in particular to the coastal and marine ecosystems and call on these States to cease nuclear testing and to conclude a comprehensive test ban treaty in 1996;]

10. *Agree* to convene the fourth Ministerial Conference on Environment and Development in Asia and the Pacific by the year 2000;

11. *Decide* to review periodically the progress made in the implementation of this Declaration and the regional action programme for environmentally sound and sustainable development, and in this context, request the Executive Secretary of ESCAP to submit to the Commission annual progress reports for its consideration.