ENVIRONMENTAL LEGISLATION AND INSTITUTIONS IN THE MALDIVES

HANDBOOK ON NATIONAL ENVIRONMENTAL LEGISLATION AND INSTITUTIONS IN THE MALDIVES

SOUTH ASIA COOPERATION FOR ENVIRONMENT PROGRAMME (SACEP)
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UNDER THE UNEP/ SACEP/ NORAD PUBLICATION SERIES ON ENVIRONMENTAL LAW AND POLICY

PREFACE

The South Asia Co-operative Environment Programme (SACEP) has identified and managed this project for the preparation of Handbooks of National Environmental Legislation and Institutions in South Asia. The project is part of a publication series on Environmental Law and Policy under the auspices of the United Nations Environment Programme (UNEP), SACEP and the Norwegian Agency for Development (NORAD).

To undertake the project, National Task Forces of environmental law experts for each South Asian country were formed with the help of their respective Governments. Meetings of the National Task Force Members were organized by SACEP in Sri Lanka to formulate a common framework for the preparation of national reports on environmental legislation. UNEP, SACEP, and Country Missions attended the meetings.

The framework developed deals extensively with environmental issues and legislative responses in the South Asian region. It seeks to cover relevant topics although not all could be accommodated due to space limitations. To make use of the regional nature of the project, a regional overview sets the law and policy context. Then, for each country, the background of socio-economic development is described and roles played by the judiciary, NGOs, and civil society are highlighted. Emphasis is placed on descriptions of the institutions, legislation, policies and programmes that evolved after the Stockholm Conference on the Human Environment in 1972. National measures are analysed according to framework and sectoral subject matter. Enforcement of national and legislation and compliance with international obligations under Multilateral Environmental Agreements are focused on. The objective of the project was not merely to describe legislation and institutions in the South Asian region, but also but to assess their effectiveness in application as tools for environmental management. Thus, each publication focuses on environmental governance, particularly the implementation of legislation.

The information/material available on the web sites of UNEP and related organizations, such as ESCAP, UNDP, the World Bank, ADB, SACEP, SAARC and secretariats of the various environmental conventions were used by members of the National Task Forces in their research. Information available on the web sites of Governments of individual SACEP countries, including the websites of and national institutions were also utilised.

The Task Force Members for each country are listed in the national Handbook that they prepared. They each deserve primary credit for their respective Handbooks of National Environmental Legislation and Institutions in South Asia. Dr Rashid Hasan edited the composite national contributions in the form of a regional synthesis report under the title of the –South Asian Handbook of National Environmental Legislation and Institutions", shaping the contributions into a common format. Due to the size of this volume, it was then revised as a series of National Handbooks. The guidance of Mr. Lal Kurukulasuriya, Chief of Environmental Law, UNEP; Mr Anand Raj Joshi, former Director, SACEP; Mr. Maqbool Elahi, Director, SACEP; Mr Prasnatha Dias Abeyegunawardene, Deputy

Director, SACEP; and Mr. Nirmal Andrews, Director, ROAP/UNEP, Bangkok, are gratefully acknowledged for their direction and encouragement in preparation of the project.

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CHAPTER I

EXECUTIVE SUMMARY

1. INTRODUCTION

The Maldives face a set of environmental problems and issues that are peculiar to their situation as an island nation, where approximately 80% of the land is less than one metre above sea level. The delicacy of the ecological system of the islands and vibrant role played by tourism and other natural resource based industries in the economy calls for sustainable development & environmental management to be given a key post on the agenda.

The main environmental impacts include the mining of coral and coral sand in the absence of other building materials, deforestation induced by the need for fuel wood, and the degradation of natural fresh water sources. The acute shortage of human resources is a major constraint to the development of the Maldives generally, and this is particularly true in the environmental technical and professional areas. At present, there is also a lack of technical equipment to monitor and assess air pollution and this is another issue that needs to be addressed urgently in order to build the necessary capacity for air quality monitoring and air pollution prevention.

Despite constraints of technical know-how, manpower, finances and technological infrastructure, the Maldivian Government has instituted appropriate policy legislation, regulatory and institutional measures for environmental planning and management. Environmental education and awareness have been given high priority by the Government and a number of initiatives have been taken in this area.

Due to the lack of natural resources and wealth, biodiversity – particularly marine biodiversity – is the most significant and vital resource base for the country. Livelihood has traditionally been marine-based as well, and marine resources still continue to be the main generator of food, earnings, employment, protection and shelter. The lack of terrestrial natural resources, compounded by limited human and financial resources, has resulted in low priority being given to the development of management measures for terrestrial natural resources. Hence, unlike others in this series, the Maldives Handbook contains no chapters on forest or wildlife management. Given the heavy economic reliance on tourism, however, it is anomalous that no measures specifically dedicated to ecotourism have been identified. This would seem to be a priority area of environmental management in need of early future attention.

In common with the smaller south Asian countries, Bhutan and Nepal, but in contrast to the larger countries, Bangladesh, India, Pakistan and Sri Lanka, there is no chapter in this

Handbook addressing the role of the judiciary. In the Maldives, the judiciary has not yet taken an activist role in environmental management.

2. LEGISLATION

The main legislative instrument for the protection of the environment in the Maldives is the Law on the Protection and Preservation of the Environment (Law No. 4/93). Law No. 4/93 established a framework upon which regulations and policies can be developed to protect and preserve the natural environment and resources for the benefit of future generations.

The Environmental Protection and Preservation Act, approved by the Citizen's Majilis in April 1993, provides the Ministry of Planning, Human Resources and Environment with wide statutory powers of environmental regulation and enforcement. Additionally, Environmental Impact Assessment (EIA) has been made mandatory for large scale projects in the Maldives through the Environmental Protection and Preservation Act (4/93). The legislation provides the basic framework for the EIA process in the country and the EIA procedures are laid out in the form of guidelines.

3. INSTITUTIONS

In 1998, environmental administration was transferred to the Ministry of Home Affairs, Housing and Environment. Important institutions dealing with environmental issues are:

- Ministry of Planning and Environment;
- National Environment Council;
- Ministry of Atolls Administration;
- Maldives Water and Sanitation Authority;
- Ministry of Fisheries and Agriculture;
- Marine Research Section;
- Selected Islands Development Unit

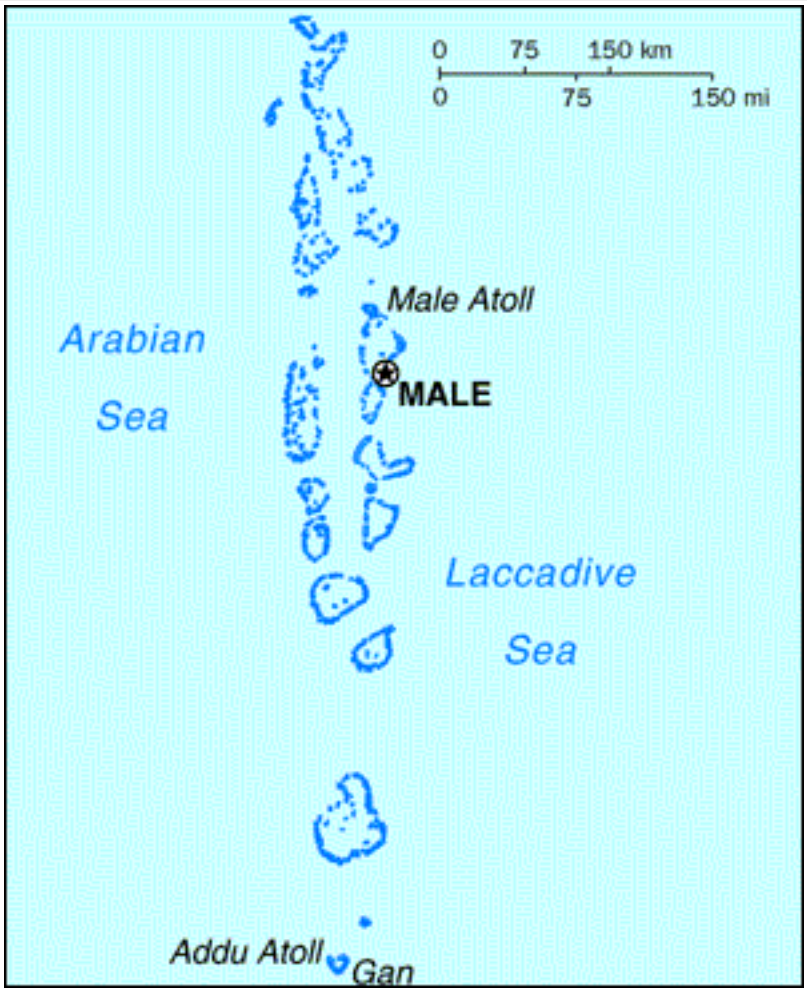
The Ministry of Planning, Human Resources and Environment is designated as the responsible body for formulating policies, rules and regulations regarding the environment, and empowers the Ministry to levy fines of up to one hundred million Rufiya (10 million US $) for breaches of the law.

The Ministry of Fisheries, Agriculture and Marine Resources has the mandate to govern the areas identified in its name. The Ministry of Tourism has an overall mandate over the area of tourism and its development. The Ministry of Health in the present context deals with integrated water resources and disposal of sewage, while the Ministry of Construction and Public Works administers the area of waste disposal and developmental projects like dredging.

CHAPTER II

LIST OF ENVIRONMENTAL ISSUES, POLICIES, LEGISLATION, INSTITUTIONS AND INTERNATIONAL CONVENTIONS IN THE MALDIVES

Map of The Maldives



Key Environmental Issues

Coral and Sand Mining; Waste Management; Institutional relationships; Poverty alleviation through capacity building of committees Gender and social structure; Local resource mobilization; expenditure for poverty alleviation, transparency and

accountability; Legal framework for decentralization; Enforcement and Compliance of Legislation; Land Resources; Coral Reefs; Sea Level Rise; Population Density; Marine Resources; Marine biodiversity; Environment Education; Capacity Building.

Environmental Policies

National Environment Action Plan; Male Declaration, 1998.

Legislation Related to Environment

Law on Uninhabited Islands (Law no: 20/98, Fisheries Law of the Republic of Maldives, 87; Environmental Protection and Preservation Act, 1993; Environmental Impact Assessment (EIA).

Environmental Institutions

Ministry of Home Affairs, Housing and Environment; Ministry of Planning and Environment; National Environment Council; Ministry of Atolls Administration; Maldives Water and Sanitation Authority; Ministry of Fisheries, Agriculture and Marine Resources; National Commission for the Protection of the Environment; Ministry of Fisheries & Agriculture; Ministry of Tourism; Ministry of Health and the Ministry of Construction & Public Works; Ministry of Tourism; Ministry of Planning, Human Resources and Environment ; Institute for Technical Education.

International Conventions/Treaties/Protocols (ICTPs) in the Field of Environment to which The Maldives is a Party

- UNFCCC,
- Convention on Bio-diversity,
- United Nations Convention on the Law of the Sea,
- Vienna Convention for the Protection of the Ozone Layer,
- Montreal Protocol on Substances that Deplete the Ozone Layer,
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

CHAPTER III

REGIONAL OVERVIEW

1. INTRODUCTION

The South Asian region comprises Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. Given the economic, social and cultural context of the countries of South Asia, similar challenges confront these regions in relation to the protection of their environment and natural resources. For instance, high rates of population growth, urbanization, and a widespread incidence of poverty are common, although all major indicators of human development have demonstrated improvements in recent years. South Asia is also home to a significant but decreasing array of terrestrial and marine biodiversity. For example, the Hindu Kush Himalayan belt is home to some 25 000 major plant species, comprising 10 per cent of the world‘s flora. In addition, Sri Lanka, India and other countries within the region are amongst the most biologically diverse countries in the world. India contains extensive savannah and forest habitats, including many endemic species of international importance, which exemplify the biological diversity of the South Asian region. South Asia is also home to approximately 14 per cent of the world‘s remaining mangrove habitat and has the highest percentage of threatened wetlands, 82 of which are in Bangladesh. The region has attained significance due to enormity of resources and biodiversity vis-à-vis developmental activities in the region.

Map of South Asia

The Rio Declaration on Environment and Development and Agenda 21 emphasised the need to develop endogenous capacity in the legal and institutional areas, which is critical for sustainable development. In this past decade, countries in South Asia have taken remarkable steps towards developing sustainable legal institutional frameworks for improved environmental management. The most successful measures taken have strengthened the synergy and coordination among various institutions for promoting a coherent and holistic approach to the management of the environment.

The legal system, and particularly the judiciary, has been a crucial partner in this process. An increasing awareness of the importance of the legal and institutional system, with regards to management within the last decade, has been a first step. There has been a continuing drive towards consolidation of the institutional structure, both conceptually and functionally, from the management of sectoral uses of the environment to the management and protection of environment in its own right. Opportunities to strengthen national and regional environmental policies and legislation that effectively integrate global, regional and national environmental priorities and concerns have been taken up. Consequently, many countries in this region have developed and incorporated contemporary approaches to environmental management.

2. ENVIRONMENTAL GOVERNANCE

Almost all the developing countries in the Asia-Pacific region have made considerable progress during the past two decades towards the fortification of the legal and institutional structures for environmental management, natural resource conservation and sustainable use. This has also incorporated a growing regard for the integration of environmental considerations in development decision making. Significant as these developments are, there remains many difficult challenges to be overcome if these legal and institutional arrangements are to function effectively. There is little doubt that building upon the gains of the past in the institutional field and promoting more effective compliance and enforcement of existing regulations will be the major focus of countries in the region in the coming years. The institutional developments that have taken place in the region demonstrate some of the major impediments that countries face in transforming these gains into an effective and efficient vehicle for advancing the goals of sustainable development. Conversely, these developments also outline some possible responses to such challenges, which if implemented with efficacy could allow recent gains to be consolidated and form the foundation for future achievements.

In the preliminary lead up to the Rio Conference and for several years thereafter, there was a multitude of legislative and institution building activities in the region. This resulted in the creation of Ministries of Environment and their executing arms and the enactment of a new generation of legislation now simply known as environmental laws. Consequently, almost every country in the South Asia region now has a Ministry or Agency empowered by law to implement a wide range of activities for the protection of the environment, conservation and sustainable use of natural resources. Central to the

responsibilities of such agencies is an underlying concern to promote the integration of environmental considerations in development decision making.

However, in light of the centuries old administrative culture founded on the unchallenged authority of ―line- Ministries", the attempted implementation of the over-arching and cross-sectoral environmental legislation and institutions *within* the existing legislative and institutional framework, created a number of difficult challenges. Initially, the Environment Ministries were viewed with apprehension and were suspected of usurping the traditionally unquestioned functions of the line ministries and agencies with statutory functions. This atmosphere of distrust of the new legislative regime made interaction and partnership, which is the essence of effective environmental management, almost impossible. This in turn led to the proliferation of environmental cells in various Ministries and agencies, including National Planning Commissions, which although was not a bad development, it reinforced the lack of co-ordination and leadership that is essential to hold together a disparate system of environmental institutions with varying capabilities and jurisdictions. These problems were further exacerbated by legislative deficiencies. Ambiguous demarcation and overlapping powers and functions, a lack of specificity, dispersed competencies and procedural difficulties were but a few of the inherent defects in this new system. These problems were compounded by management and resource deficiencies, typified by the absence of horizontal and vertical consultation, a lack of delegation and decentralisation, inadequate financial, human and material resources and a lack of information and training.

Examples abound in almost every country in the region, where responsibility for environmental oversight is dispersed among a varying number of national institutions resulting in the weak implementation of policies, plans and laws, the under-investment in environmental improvement and lack of opportunities for local level participation. In Sri Lanka, some four or five ministries co-ordinate with one another for environmental decision making, including the ministries of Environment, Energy and Industry. Thus further complications are created by the clashing jurisdictions between the central government agencies and provincial agencies. In federal systems of government such as India these challenges and complexities are exacerbated by the constitutional separation of legislative and executive powers.

3. ENVIRONMENTAL INSTITUTIONS

Cabinet-level environmental agencies are now established in all South Asian countries, but in the absence of a clear direction, these bodies remain generally weak. The principal regulatory vehicle relied upon by these agencies has been the application of environmental impact assessments to review large development projects. Unfortunately this process has been poorly implemented and even subject to considerable corruption in several countries, which has undermined any potential success. Efforts to control industrial pollution through rigid permitting schemes—tied often to unrealistic emissions and discharge standards—have also had disappointing results. The over-emphasis of donors in supporting these fragile government environmental bodies has been to the

detriment of other potentially more influential institutions. Ministries of central governments deserve much greater attention. Outside the executive branch, legislative bodies are of growing importance as sources of innovation and action to address environmental issues of social concern, but have received very little support with respect to their involvement in environmental matters. Furthermore, as stated by the activist Supreme Court of India, the judicial branch has the potential to play quite a significant role in shaping environmental policy. However, it, too has received relatively little assistance in building its understanding of environmental issues and exploring options for positive action. At the same time, there is a strong trend toward decentralisation and devolution within the region. Essentially this means that an entirely new group of government agencies—at state, city, and local levels—will require environmental management skills.

The establishment of Environment Ministries in many countries in Asia in the last decade, has been a laudable achievement. Ministries have emerged in countries across the region including **Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka,** where they have the capacity to formulate environmental policies as well as overseeing the work of other ministries relating to the environment.

(i) Example Box 1: Environment Ministries in South Asia

In the **Maldives**, the Ministry of Population and Environment has the responsibility of formulating rules and regulations regarding the environment.

The ***Pakistan****, Environmental Protection Act 1997* established the **Pakistan** Environment Protection Council, which consisted of the Prime Minister and all Ministers in charge of the subject of the environment. In addition the Council was composed of at least twenty 'non-officials' including representatives from commerce and industry, medical and legal professions, trade unions and NGOs and the technical/scientific community. The **Pakistan** Environmental Protection Agency (PEPA) was also established under the framework legislation and was created for the primary purpose of administering and implementing its provisions, rules and regulations. The Pakistan Environment Protection Council has the power to direct government to prepare, promote and implement projects for the protection, conservation, rehabilitation and improvement of the environment, as well as the prevention and control of pollution and the sustainable development of resources. These directives can be instituted either at the Council's initiative or by public request.

In **Sri Lanka**, the *National Environmental Act* (No. 47 of 1980 as amended by No. 56 of 1989) established both a Central Environmental Authority and Environmental Council. The Central Environmental Authority is a corporate authority with executive functions within the field of environmental management. The Authority is empowered to control the administration and implementation of the governing framework legislation.

The Environment Ministries established in many South Asian countries including India, Sri Lanka and Pakistan, are responsible for implementing the frameworks for environmental laws and for formulating environmental policies. In addition, this far-reaching scope of responsibility extends to overseeing the work of other ministries, departments and agencies relating to the environment. In the Maldives, for example, the Ministry of Environment is responsible for formulating rules and regulations regarding the environment in areas that do not have a designated government authority to carry out such functions.

Environmental agencies have been set up at the provincial level to assist in the implementation of national strategies and to improve the assessment and monitoring of resource use. They also help coordinate different sectoral agencies in addition to local authorities. Municipalities and local councils provide assistance in the execution of national environmental policies, as well as by initiating their own resource protection measures. Many local and provincial governments have formulated their own Local Agenda with 21 strategies for environmental management, which is often supported by the State. On a similar note provincial governments in Pakistan have begun preparing environmental strategies to complement the national one.

Many institutions have incorporated environmental concerns into their economic decision-making process through their Five-Year Plans. Often there are specific environmental sub-sections within a planning ministry. These provide environmental inputs into the National Plan following organised consultations with working groups from other sectoral ministries, including the environment ministry, as well as experts.

(ii) Example Box 2: Public Planning in South Asia

A National Environment Committee was established in 1989 in **Bhutan**, as part of the Planning Commission under the Royal Command of His Majesty the King. The Environment Secretariat was de-linked from the Planning Commission and promoted to an independent organisation functioning as the National Environment Commission (NEC) in 1992. The NEC is a high-level, cross-sectoral body composed of Ministers and officials from various sectors and has the responsibility of creating legislation, regulation and ensuring that the Royal Government's obligations under global environmental conventions are satisfied.

India has well evolved institutes at central, state, district and local levels and has established a National Environmental Council headed by the Prime Minster to control the direction of environmental matters. The higher echelons of the Council hierarchy represent a think tank for the creation and development of appropriate plans and strategies. Recently in 2003, a National Forest Commission has also been established to control forestry matters under the Chairmanship of a retired Supreme Court Judge. The Pimpri Chinchwad Municipal Corporation, a city near Mumbai, established an institutional structure to effectively involve citizens in a participatory way in the planning process of the city. This initiative was instituted with assistance from the International

Council of Local Environmental Initiatives (ICLEI). A media campaign was launched to increase public awareness and meetings were arranged to discuss development issues. A stakeholder group was established, consisting of government, academics, media and NGOs to review the inputs from the far-reaching community consultations, and to discuss issues of waste management and the concerns to improve slum areas.

In the **Maldives** in 1998, the environment was given an elevated status being combined with the then Ministry of Planning and Development to form the Ministry of Planning and the Environment. The premise for this move was based on the rationale that environmental considerations needed to be completely and efficiently integrated into development planning with the country. In 1998, environmental administration was transferred to the Ministry of Home Affairs, Housing and the Environment, which is responsible for developing all aspects of environmental policy and enforcement of legislation. It now administers and co-ordinates with other agencies and implements programs to increase public awareness.

In **Nepal**, for example, the National Planning Commission (NPC) must assess and approve all public environmental policies, programs and projects before they go into effect. As the NPC also plays a role in co-coordinating inter-sectoral activities, monitoring environment-related actions and providing a budget, this integrated role as overseer is very important. In both, **Nepal** and **India**, the development planning process now includes broad consultation between all levels of government. The Eighth Five-Year Plan in **Nepal** supported the creation of a high-level Environment Protection Council and advisory body with the Prime Minister as chair, to formulate policies, give directives and establish inter-ministerial coordination and monitoring related to environmental management.

The range of functions entrusted to Environment Ministries includes the creation and implementation of policy, the promotion of environmental considerations into development decision-making and the monitoring of the environment. The Environment Ministry provides technical advice on environmental issues, formulates environmental policy inputs, implements programs on environmental protection and enforces the laws and regulations for pollution control and resource management. The Minister usually reports directly to the parliament on the state of the environment. The Environment Minister also oversees the actions of the executive agency such as a Department of Environment (Bangladesh) or a statutory organisation (Sri Lanka) and monitors the activities of the other institutions and sectors that impact on the natural environment. These diverse functions are all effected within an overarching premise of promoting awareness of environmental matters.

These departments or agencies are typically responsible for standards-setting and Environmental Impact Assessment (EIA). In addition, these bodies have the crucial function of coordinating and controlling environment pollution through the issuing of licenses and desist orders, carrying out environmental inspections, monitoring verification

and data collection and analysis as well as a public complaints and dispute settlement schemes. By keeping the natural environment under their constant review, these institutions provide a forum for public participation, which serves as a catalyst for promoting environmental education, training and research and is a vital for the dispersal of information. Often, they are also charged with the implementation of international environmental agreements, which further exemplifies the critical role of these agencies in the environmental sphere.

The lack of specificity in the powers, functions and duties of these national environmental institutions and in some instances overlapping jurisdictions, have been a major source of conflict between them, resulting in constant institutional conflicts and the consequent weakening overall of environmental management systems. Thus particular inherent defects undermine the achievements and potential effect that these bodies can have for environmental protection and awareness issues.

Though conceived as an apex institution to integrate environment and development, these bodies have in practice been largely inactive and in several countries. Many of these agencies have not met at all or meet very infrequently, thereby negating the very purpose for which they have been established by law. Perhaps the reasons for not activating these consultative agencies lies in the size and constitution of these bodies, financial and other constraints as well as the use of the alternative and more informal consultative mechanisms. Despite a measure of regional cooperation on transboundary water allocation and water quality issues these nevertheless remain a problematic area in the South.

4. CONSTITUTIONS AND THE ENVIRONMENT

After the Stockholm Conference many countries of the world incorporated provisions relating to the environment to safeguard the natural resources and the pristine environment. South Asian countries in particular were in the forefront to amend their constitutions to facilitate the environment protection and its conservation in the region.

The Constitution of India is perhaps the first of its kind to provide for the protection and safeguard of the environment through the Directive Principles and the Fundamental Duties. Sri Lankan Environmental Management Policy originates from the country's supreme law, i.e. the Constitution. The 1978 Constitution recognises that the State shall protect, preserve and improve the environment for the benefit of the community (Article 24(14)), as principles of State policy. The Constitution also recognises that it is the duty of every individual in Sri Lanka "to protect nature and conserve its riches" (Article 28 (f)). Similar to other nations of the region, Bangladesh has also responded to the global call for the protection and conservation of her natural environment and ecology. The Constitution of Bangladesh asserts that it should be a fundamental responsibility of the State to attain, through planned economic strategies, a constant increase of productive forces and a steady improvement in the material and cultural standard of living of the

people (Artlcle-15). Nepal‘s new Constitution of the Kingdom of Nepal, 1990, which arose following the period of political realignment in Nepal, imposes a duty upon the State to incorporate environmental matters into its policy making and implementation process.

(iii) Example Box 3: Constitution of Sri Lanka

Chapter VI, Article 28
The exercise and enjoyment of rights and freedoms is inseparable from the performance of duties and obligations, and accordingly it is the duty of
every person in Sri Lanka -
(a) - (c) ...
(d) to preserve and protect public property and to combat misuse and waste of public property;
(e) ...
(f) to protect nature and conserve its riches…

5. ENVIRONMENTAL LEGISLATION

In this region, governmental responses to the problems of environmental pollution took the form of legislative enactment to deal with the causes of environmental impacts, particularly industrial effluents and nuisance. Thus, in addition to new sectoral legislation to fill the more apparent gaps in national frameworks, comprehensive anti-pollution laws were enacted. Important examples are the *Water (Prevention & Control of Pollution) Act 1974*; the *Water (Prevention & Control of Pollution) Act, 1981*; the *1977 Pollution Control Ordinance of* ***Bangladesh;*** and the *1980 Central Environmental Authority Act of* ***Sri Lanka***. Despite the apparent diversity of emphasis enunciated in these legislative creations, the primary focus remained on pollution control.

Framework environmental laws are enacted to canvass the entire spectrum of cross-sectoral environmental issues. Recently this has incorporated an ―umbrella" approach, a legislative technique for environmental management that establishes the basic legal principles without any attempt at codification. It normally entails the declaration of environmental objectives and policies, the establishment of the necessary and relevant environmental institutions, and the definition of the common procedural principles for environmental decision-making applicable to all sectors. In this latter respect, the legislation often covers such cross-sectoral issues as environmental impact assessment, environmental quality criteria and public participation in decision-making and implementation. **Sri Lanka**'s *Central Environment Authority Act* of 1980, and *The Environmental Protection Act, 1986 of India* are demonstrative of the broad range of areas that such framework legislation attempts to cover. Most recently, **Bangladesh's** *Environment Conservation Act*, *1995* has come into force within the same time frame as **Pakistan**'s *Environmental Protection Act*, 1997 and the *Environmental Protection Act, 1997* of **Nepal**.

Resource conservation legislation in the region incorporates a wide range of environmental management concerns, including water resources protection and conservation, forest laws, marine resources management, land use management, preservation of natural habitats and conservation of heritage. Most countries in the region have enacted laws specific to these issues and introduced innovations to make their enforcement more effective. However, existing defects in legislation make the administration of conflicting demands on resources difficult to manage. In the countries of South Asia, the management of forests and forest resources has been given considerable priority.

(iv) Example Box 4: Forest Management in South Asia

In India, under the provisions of the *Forest (Conservation) Act, 1980* prior permission of the Central Government is essential for the diversion of forest land for non-forest purposes. Linked to this are the provisions in the *1986 Environment (Protection) Act*, which restrict the establishment of any new wood based unit, expansion and modernisation of such units, renewal of licenses for such units and construction of any infrastructure related to the setting up of new, as well as existing, wood based units. In **Nepal**, the government is encouraging user groups and village communities to participate in forest management and it has implemented a mandatory requirement that industries setting up in forest areas or using forest products must commission a detailed environmental impact assessment**. Sri Lanka** has set up national parks, nature reserves and sanctuaries to prevent the destruction of forest areas.

Environmental quality and anti-pollution regulations remain the most widely utilised legislative technique for pollution control, though several new approaches are evident in contemporary State practice. These laws have a wide ranging scope, as they typically canvass issues related to air quality, water, marine pollution, solid waste disposal and toxic materials management. Furthermore, this legislation establishes quality criteria, defines pollutants, sets permissible limits and regulates the suitability and effectiveness of compliance and enforcement methods. One of the most widely utilised techniques for environmental control is the system of authorisation (by permit, certification, licence) administered by government institutions.

In light of the fact that the substance of the framework legislation is less detailed than the former anti-pollution laws or the comprehensive environmental code options, the implementation of its principles inevitably requires further enabling legislation. The basic legislation can remain intact while the implementing frameworks are reformulated in response to changes in socio-economic and ecological factors. Similar provisions authorising specified government agencies to issue environmental quality criteria, standards and norms to control air, water and waste pollution exist in the legislation of **Bangladesh**, **India, and Sri Lanka**.

Legislation can also be an instrument for instituting novel approaches to dispute avoidance and settlement and promoting public participation at all levels in environmental decision-making and implementation. Such participation can be secured through the establishment of appropriate local level dispute mediation, conciliation and settlement institutions and the definition of "citizen rights" to enforce legislation. This latter aspect may become an important safeguard and increase government accountability, particularly where public agencies are remiss in their duties or have violated the law.

The effective implementation of environmental legislation presupposes the existence of appropriate institutional arrangements and processes. The sectoral approach to environmental management has had the effect of diffusing power and responsibility in diverse government departments (and in certain cases in local authorities) without any mechanisms for coordination. Jurisdictional overlaps and conflicts have inevitably arisen, thereby inhibiting not only the effective implementation of sustainable development policies, but also law enforcement. The major practical problems result from the difficulties in establishing an effective system of control and mechanisms to enforce the law.

6. ENFORCEMENT OF ENVIRONMENTAL LEGISLATION

Effective enforcement of environmental legislation is contingent upon the availability of adequate staff and financial resources, the administrative and political will of the enforcement agencies and the level of awareness of environmental laws. It is common, however, to find situations where responsibility for enforcement of laws is divided amongst a number of government agencies that pursue conflicting interests, thereby delaying or forestalling the implementation of these laws. In response, for enforcement to be effective, developmental planning processes have to be closely coordinated, with powers ideally vested in one apex agency.

Judicial activism and public participation have, in recent years, enhanced enforcement efforts of governments in implementing environmental laws. The courts are not only allowing the public to file public interest litigation for violation of environmental rights, but are also giving directives to the government to take corrective steps to rectify environmental damage. The imposition of fines and penalties on defaulting industries and closure of polluting units are examples of measures that have been frequently imposed by the courts.

The courts have also stressed the preeminence of the ―polluter pays" and precautionary ―prevention is better than a cure" principles as critical safeguards for sustainable utilisation of natural resources and for environmental balance. Judicial decisions in **Sri Lanka, India, Bangladesh** and **Pakistan** regarding environmental assessments for development projects have provided a much needed impetus for the enforcement of EIA legislation. It is also significant that in most cases the courts have accepted the principle

of *locus standi* as a requirement in the promotion of public participation in the judicial process for environmental issues.

Each country has an environmental legislative framework to approach the resolution of the national environmental problems specific to the country. The International agreements are focused on atmosphere, hazardous substances, marine environment, terrestrial resources, nature conservation and transboundary pollution. The key principles followed in the international agreements include Sustainable Development, Intergovernmental Equity, Common but Differentiated Responsibilities, Prior Informed Consent, the Precautionary Principle, the Polluter Pays Principle, and the concept of Permanent Sovereignty over National Resources.

7. ENVIRONMENTAL IMPACT ASSESSMENT

Economic development in developing countries has focused on immediate economic gains and, as such, environmental protection has not been prioritised. This primarily occurs because the economic losses from environmental degradation often manifest only long after the economic benefits of development have been realised. The past failure of development planning processes to take adequate account of the detrimental impacts of economic development activities, led to the advent of *environmental impact assessment (EIA)* processes. EIA was first employed by industrialised countries in the early 1970s. Since that time, most countries have adopted EIA processes to examine the social and environmental consequences of projects prior to their execution. The purpose of these processes is to provide information to decision makers and the public about the environmental implications of proposed actions before decisions are made.

Provision for EIA is made either in the national framework legislation or in subsidiary legislation. **Nepal** has attempted to harmonise sectoral legislation by formulating national EIA guidelines that identify the agencies responsible for reviewing the assessment report. Other countries in the region that have made EIA mandatory include **India, Sri Lanka, Bhutan, Maldives and Nepal**. In addition, such legislative sanction for EIA has the advantage of introducing greater objectivity in the decision making process. In the context of sustainable development, mandatory EIA also ensures the participation of stakeholders and the public in the EIA process, which brings cross-sectoral ideas and views into perspective and thereby enlightens the decision making process.

The need to integrate environmental considerations into national socio-economic planning is now widely recognised across the South Asia region. The EIA process has become the most common institutional mechanism for achieving such integration. EIA has become a crucial tool in guiding policy choices and has helped to create an environmental awareness amongst agencies involved in project implementation. The system of EIA has the capacity to minimise potential environmental damage or even prevent the occurrence of such problems at the preliminary stage of project formulation.

For many countries in the region an Initial Environmental Examination (IEE) or Environmental Impact Statement (EIS) has been made mandatory through the national framework legislation or the enactment of subsidiary legislation. **Nepal** has formulated EIA guidelines that involve the review of the Planning Commission, Environment Ministry as well as the agency implementing the project. **India** and **Sri Lanka** have both instituted a mandatory system of EIA for specified development projects.

(v) Example Box 5: Environmental Impact Assessment

The *Environmental Protection Act 1986*, in **India** has made Environmental Impact Assessments (EIA) mandatory for 29 categories of development activities, which has been facilitated by the creation of expert groups in the sectoral agencies to ensure a broad range of sectoral inputs to the process. These committees meet regularly to review and discuss proposals. Nepal harmonised their EIA legislation into National EIA Guidelines, which clearly name the National Planning Commission, the Environment Division and the relevant line ministries as the agencies responsible for reviewing the EIS.

The **Sri Lankan** Ministry of Environment has held that adequate and rigorous consideration of alternatives is central to any Environmental Impact Assessment process, which is only facilitated by the availability of sufficient information to permit a reasonable choice of alternatives to be made. At the conclusion of this wide-ranging and objective process, decision-makers are better equipped to design and implement an "environmentally friendlier" activity. In **Sri Lanka**, the EIA process has been designed to promote inter-ministerial and inter-sectoral coordination where sectoral ministerial representatives, as well as the private sector, formulate and review EIA activities, regulations and policies.

In addition to the critical importance of public participation in the EIA process the need to ensure consultation and active partnership among interested governmental and parastatal institutions is also imperative. Whether operating at the national or local level, all of these bodies have relevant expertise and practical experience to contribute to the EIA process. EIA has helped to ensure that the wide range of national, provincial/state, local authorities, scientific and technical sectors have all been given an opportunity to comment on proposed activities, thereby avoiding costly mistakes and facilitating inter-sectoral co-operation. The heart of the EIA is in the analysis of alternatives. This system aims to seek out the most appropriate project option in light of diverse considerations from both an environmental and socio-economic perspective.

The critical issues for EIA development in the South Asia region are consistency in application, which can only be obtained through centralised management, decentralised implementation and access to independent expertise. The EIA process must continue to focus on greater public participation in the process and improved access to information in order to make any such public involvement meaningful. Although incredible progress has been made in the development of an EIA legislative network in the countries of the

region, the actual implementation of these provisions nevertheless remains problematic. In order to prevent circumvention of the crucial premise of the legislation, EIA procedures must not be regarded merely as obstructions to the goals of development.

8. ROLE OF THE JUDICIARY

The present judicial systems in India, Pakistan, Sri Lanka and Bangladesh represent an evolution from the traditional institutions established during the colonial period. The conventional role of the judiciary, being that of dispute resolution (civil jurisdiction) and the trial and punishment of those charged and convicted of crimes (criminal jurisdiction), has evolved over a considerable period of time. The basic elements of a modern system of civil and criminal justice have been in operation in much of the sub-continent for more than a century and in Nepal at least since 1951, when the Interim Constitution was promulgated.

The Judiciary plays a crucial role in promoting goals of sustainable development. Judicial institutions serve as agencies for interpreting legislation relating to environmental issues, integrating emerging principles of law within the holistic paradigms of sustainable development, providing a coherent and comprehensive strategy for handling diverse sectoral laws into a cross-sectoral approach and ensuring effective implementation of legislation. This extensive scope of influence has been extended in recent years where the judiciary now safeguards an individual's fundamental rights to a satisfactory environment. The rule of law becomes particularly important, as regulations and procedures, which govern human activity, serve to limit conflicts arising from competing claims (social, economic and ecological) on scarce resources whilst also ensuring sustainable development. Thus crucial to the role of the judiciary is the need to strike a balance between the competing demands of industry and individuals within an overarching need to preserve a sustainable environment.

Connections and linkages between different forms of activity and their environmental consequences are subject to different interpretations and reflect the inherent complexity of these issues. Therefore the judiciary is called upon to resolve such issues without compromising the fundamental goals and rights of civil society. The structure of judicial institutions in different countries in South Asia has not been satisfactorily modified to provide for the requirements necessary to achieving sustainable development. In many countries the Supreme Courts have taken the lead in interpreting laws and giving directions, many of which have had a far-reaching impact on environmental management. The Supreme Court in India, for example, in recognising the role of environmental protection for the achievement of sustainable development and growth, has been establishing mechanisms for the institutionalisation of judicial direction in environmental matters. The Court has adopted and set procedures that become the guiding law for the subordinate courts in the country. The most important innovation has been the Public Interest Litigation that enables individuals and organisations to file a writ petition with the objective of protecting environmental resources and benefiting the affected people. The Supreme Court of India has also established specialised High Court benches known

as –Green Benches" to deal specifically with environmental management issues. Similarly, in Pakistan the superior courts exercise jurisdiction conferred under Articles 184(3) and 199 of the Constitution. Nepal's 1997 Environmental Protection Act continues with this trend of judicial regulation by providing for the designation of a Prescribed Authority to administer the filing of environmental cases. However, appropriate rules for designating such an authority have not yet been formulated and environmental cases continue to be brought before subordinate courts.

An active judiciary has the potential to ingrain the rights of people to enjoy a certain level of environmental protection and to seek judicial intervention where these are violated. The judiciary may also act as a check on government policies that disrupt fragile ecological balances and generate awareness and consciousness amongst policy makers through court verdicts and orders. However, there is a need for specialist environment courts that can facilitate more consistent and expeditious environmental decision-making. These courts would reduce the number of cases brought before the Supreme Courts and High Courts and, as a single combined jurisdiction would be less expensive than a network of separate tribunals, administrative costs would also be limited.

In **Bangladesh, India, Sri Lanka** and **Pakistan** the Supreme Courts have broadly interpreted the "fundamental right to life" element contained in each of their constitutions. This approach entrenches the rights of the public to a healthy and protected environment into a solid legal foundation. The interpretation of constitutional rights was broadened in Bangladesh in the 1995 Supreme Court decision of *Dr. Mohiuddin Farooque* v. *Secretary*, *Ministry of Communication*, *Government of the Peoples' Republic of Bangladesh.* This case involved a petition against various Ministries and other authorities for failing to fulfil their statutory duties to mitigate air and noise pollution caused by motor vehicles in the city of Dhaka. The substance of the petition was that although the Constitution of Bangladesh contained no specific right to a safe and healthy environment, this right was part of the explicit "right to life" enshrined in the Constitution. The Court agreed with this argument and, as such, the rights to a protected environment are implicitly recognised as being inherent to the right to life. This interpretation was supported by constitutional prohibitions on actions detrimental to life, body or property. Similarly, in Pakistan the courts have broadly interpreted the 'right to life', stating that persons must not only be able to sustain life, but also to enjoy it, which necessarily incorporates one's right to a healthy and sustainable environment.

Courts have applied the public trust doctrine in regard to the management of natural resources and the environment, and in some states have given consideration to the concept of inter-generational and intra-generational equity. In this respect the administration of environmental issues and litigious matters is approached with firm consideration for maintaining the environment for future generations. In the 1988 Supreme Court of **India** decision of *Rural Litigation and Entitlement Kendera* v. *State of U.P.*, the Court ordered a cease to unauthorised and illegal mining in the Dhera Dun District, which was adversely affecting the ecology of the region. The Court specifically

remarked that the area was a gift of nature to mankind and a bequest of the past generations to the future.

The responsibility and liability of the industry has been emphasised by the judicial support for the polluter pays principle. This principle was specifically addressed in India with the 1996 Supreme Court decision *Indian Council for Enviro-Legal Action* v. *Union of India*, where an action was brought to stop and in an effort to remedy the pollution caused by several chemical industrial plants in Bichhri village, Udaipur District, Rajasthan. The Court noted the finding in the *Oleum Gas Leak Case II* under which an enterprise that is engaged in a hazardous or inherently dangerous activity which results in harm to anyone, is strictly and absolutely liable to compensate all those who are affected by the accident. This rule deviated from the exceptions of strict liability set forth in the definitive case of *Rylands* v. *Fletcher* to accommodate the particular conditions in India. The Court also strongly endorsed the polluter pays principle, under which the financial costs of preventing or redressing damage lie entirely with those who are responsible for the pollution. This principle also played a role in another 1996 Supreme Court of India decision, *Vellore Citizens Welfare Forum* v. *Union of India*. In this instance the Court found that although the Respondent leather industry was a major foreign exchange earner for India and employment provider, this did not authorise the destruction of the ecology, environmental degradation or the creation of health hazards as a necessary incident of the industry. The Court ordered the Central Government to establish an authority to deal with the situation created by the tanneries and other polluting industries in the State of Tamil Nadu. This authority was to implement the precautionary and polluter pays principles and identify the losses to the ecology, environment and to individuals and families who had suffered because of the pollution. Upon determination of such losses the authority was to assess compensation by reference to the costs necessary to reverse the environmental damage and compensate those who had suffered.

Thus the emergence of a clear judicial concern for the integration of environmental concerns in the sphere of development and decision-making has been apparent in many recent cases. The 1988 Supreme Court of **India** decision, *M.C. Mehta* v. *Union of India and others*, provides an example of the advancement of the concept of sustainable development. Here the Court observed that while it was conscious that its decision to prevent tanneries, which were polluting the River Ganga, from operating until they installed primary effluent treatment plants, could bring unemployment, the decision to defend and improve the environment for present and future generations had become an imperative goal. The precautionary principle was applied in **Pakistan** in the 1992 Human Rights case of the Supreme Court, *Ms. Shehla Zia and others* v. *WAPDA.* The Court advocated the precautionary principle for the legal system, including both the judiciary and the various regulatory agencies, when responding to scientific uncertainties in the evidence before them. It was emphasised that a policy of sustainable development should be adopted to strike a balance between economic progress and prosperity and to minimise possible hazards.

Great advances have also been made in the region in relation to access to justice. This has been largely facilitated by providing wider standing for aggrieved parties to seek redress and the expansion of substantive and procedural matters related to public interest litigation. The judiciary has extended the eligibility for public interest standing so that weaker sections of society are not denied access to environmental justice, particularly in respect of a subject matter of great public concern. The 1996 Supreme Court of **Bangladesh** (Appellate Division - Civil) decision in *Dr. Mohiuddin Farooque* v. *Bangladesh*, *Represented by the Secretary, Ministry of Irrigation, Water Resources & Flood Control*, extended the interpretation of "any person aggrieved" in the Constitution of Bangladesh to include not just individually affected persons, but also to the public in general, as a collective and consolidated personality. In this case, the petitioner, the Secretary General of the Bangladesh Environmental Lawyers Association, had filed a petition on behalf of a group of people in the district of Tangail whose life, property, livelihood, vocation and environmental security were seriously threatened by the imposition of a flood control plain. The Court concluded that the petitioner should be given *locus standi* to maintain the writ position, as the cause espoused by the Association *bona fide*, both in respect of fundamental rights and constitutional remedies, was a cause of an indeterminate number of people in respect of a subject matter of great public concern.

The public's right to access information was emphasised in **India** in the case of *Bombay Environment Action Group, Shaym H.K. Chainani Indian Inhabitant, Save Pune Citizen's Committee* v. *Pune Cantonment Board*, a 1986 decision in the High Court of Judicature, Bombay. In this case the Court upheld the right to information and the rights of recognised social action groups to obtain such information. This decision was founded on the rationale that the disclosure of information in regard to the functioning of the Government and the right to know, flows from the right of free speech and expression guaranteed under the Constitution. The Court also determined that "people's participation in the movement for the protection of the environment cannot be over-emphasised." Thus to stimulate public participation people need education, information and the right to express their concerns. The Petitioner, M.C. Mehta in the 1992 Supreme Court of India decision, *M.C. Mehta* v. *Union of India and Others*, asked the Supreme Court to issue a direction to cinema halls, radio stations and schools and colleges to spread information relating to the environment. The Petitioner made this application on the grounds that the Indian Constitution required every citizen to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures. To fulfil these environmental obligations, the Petitioner argued that people need to be better educated about the environment. The Court agreed and noted that it was the Government's obligation to keep citizens informed about such matters, and hence issued the requested directions.

9. SOUTH ASIA COOPERATIVE ENVIRONMENT PROGRAM

The South Asia Co-operative Environment Program (SACEP) is an inter-governmental organisation established in 1982 by the Governments of South Asia to promote and support the protection, management and enhancement of the environment in the region.

The Secretariat consists of the Director General and professional, administrative and supporting staff. The Director General is appointed in rotation from the member states in alphabetical order for a period of three years. The preeminent function of the Secretariat is to assist the Governing Council, the Consultative Committee, National Focal Points and Subject Area Focal Points in the discharge of their duties and responsibilities. It is based in Colombo and the Sri Lankan Government provides financial support for its existence.

The SACEP is also acting as the Secretariat for implementing the South Asian Seas Program, which was designated in 1983 as the ninth UNEP's Regional Seas Program. Bangladesh, India, Maldives, Pakistan and Sri Lanka are the countries participating in this program and have each ratified the Action Plan in 1995 for the protection and management of the coastal and marine resources in the region.

SACEP currently receives three types of financial assistance for its activities:

- Annual country contributions from the member countries on a agreed scale of assessment
- The hosting and support facilities provided from the Government of Sri Lanka as the host country of the Secretariat
- Bilateral - NORAD, SIDA, & the Netherlands Government

Afghanistan, **Bangladesh**, **Bhutan, India, Maldives, Nepal, Pakistan** and **Sri Lanka**, are the eight participatory countries that have ratified the Articles of Association of SACEP. All member countries of SACEP belong to the developing world and five have been classified as amongst the least developed. Most of these nations share similar environmental problems stemming from poverty and its consequences on natural resources. According to the World Bank, during the past decade South Asia has been the second fastest economically growing region in the world. Consequently, South Asian efforts at increased production have imposed a mounting pressure on natural resources and the environment. Significant natural resource concerns in South Asia include the depletion of water quality and quantity, the reduction of forests and coastal resources and soil degradation resulting from nutrient depletion and salinisation.

The primary objective of SACEP is to promote and support the protection, management and enhancement of the South Asian environment. To achieve this aim there is a great emphasis on an approach that incorporates an individual, collective and co-operative level of involvement from all participatory countries. This action takes place within the context of encouraging the judicious use of the resources of the environment with a view to

alleviating poverty, reducing socio-economic disparities and improving the quality of life of the people

The functions of SACEP are to promote co-operative activities that would be beneficial to member countries in priority areas of mutual interest. In addition SACEP provides a forum to facilitate exchange of knowledge and expertise and provide local resources for implementation of priority activities while mobilising maximum constructive and complementary support from donor countries and agencies.

The Governing Council is responsible for determining the policies and programs of SACEP and it oversees these activities by meeting regularly to review the ongoing programs and to endorse new recommendations put forward by the Secretariat. It consists of one representative from each of the member states, who will be of ministerial rank. Since becoming a legal entity in 1982, SACEP has held eight GC Meetings and the following table indicates the important initiatives and decisions taken at these meetings. See table on pp.40-43.

The Consultative Committee comprises the representatives of the diplomatic missions in Colombo and the Secretary of Ministry of Forestry and Environment of Sri Lanka. It is responsible for facilitating the implementation of policies, strategies and programs approved by the SACEPs Governing Council. The Consultative Committee meets regularly to provide guidance to the Secretariat in its activities and at the time of May 2001, 79 Consultative Committee Meetings had been held. Presently the Indian High Commission in Sri Lanka is the Chair of the Committee.

Each Member State has designated a National Focal Point to facilitate the work of the Secretariat and to function as the main communication link between the Secretariat and the respective country. National Focal Points are expected to implement and monitor national programs in co-operation with the Secretariat.

The Subject Area Focal Points are expected to co-operate with the Secretariat in project identification, formulation, implementation and monitoring. The country that is responsible for a particular subject area designates a centre of excellence in that subject and appoints a liaison officer. The member countries were assigned as the focal points for the following subject areas at the 7th GC Meeting of SACEP in 1998:

Bangladesh: Management of Freshwater Resources
India: Conservation of Biodiversity, Energy and Environment; Environment Legislation, Education & Training; Waste Management
Maldives: Management of Coral Island Ecosystems; Sustainable Tourism Development
Nepal: Participatory Forestry Management,
Pakistan: Air Pollution, Desertification, Science & Technology for Sustainable Development
Sri Lanka: Sustainable Agriculture & Land Use; Sustainable Human Settlement

Development

Since its inception in 1982, SACEP has initiated a number of projects, which aim to build upon and improve national capacity to manage environmental issues. The overall focus of SACEP‘s activities includes capacity building and institutional strengthening; conservation and sustainable use of biodiversity; ecosystem conservation and management; environmental information and assessment; and education and awareness raising. SACEP‘s members include Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, and Sri Lanka.

The formulation of the Regional Seas Program was a major achievement under the aegis of SACEP and it is one of the few major transboundary environmental programs of South Asia. Under this program a South Asian Seas Action Plan was also prepared in addition to national and regional overviews and action plans. The implementation activities relate to integrated coastal zone management; development of national and regional oil and chemical contingency plans; and the protection of the marine environment from the impacts of land-based activities.

Another major program undertaken by SACEP has been the improvement of the legal and institutional frameworks in the countries of the sub-region, which has been facilitated by technical assistance from UNEP Regional Office for Asia and the Pacific. Under this program, national workshops were organised in Bangladesh and Nepal covering environmental law from both national and international convention implementation perspectives. In the Maldives, support was given for a National Planning Meeting to develop National Environmental Legislation. In Sri Lanka, activities were carried out in development of regulations; preparation of a model statute; establishment of environmental standards; preparation of the state of environment report; training programs; and an environmental awareness program for children. SACEP launched the Private and Public Cooperation Initiative to promote cooperation between governments and the private sector. With the support of UNEP and NORAD under this initiative, a Regional Seminar on Cooperation for the Promotion of Environmentally Friendly Business Practices is being convened.

10. SOUTH ASIAN ASSOCIATION FOR REGIONAL COOPERATION

The South Asian Association for Regional Cooperation (SAARC) was established in 1983 with its headquarters in Katmandu. It includes the countries of Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. SAARC has a particular focus on economic cooperation although it also covers many aspects of regional cooperation (including environment). SAARC has steadily grown and, as a result of recent coordination initiatives between the two programs (SAARC and SACEP), its environmental activities are complementary to those of SACEP. SAARC has established technical committees in many fields. The Committee on Environment was given the status of a Technical Committee in 1992, the year in which a special session of this

Committee was held in Pakistan to prepare modalities and programs of action. The implementation of the recommendations of the Regional Study on Greenhouse Effects has also been mandated to this Committee.

Countries of the sub-region are also participating in four transboundary efforts being promoted by the World Bank in Asia and the Pacific. URBAIR and the Two-Stroke Vehicle Engine Initiative address the problem of the rapid degradation of air by pollution in South Asia‘s largest cities. The Bay of Bengal Environment Program funded by GEF and jointly implemented with FAO addresses fisheries research, environmental emergencies, large marine ecosystems and coastal zone management in and around the bay. Both South and East Asian countries are involved in this program. The South Asia Development Initiative seeks to improve regional cooperation in the most impoverished parts of South Asia (Bangladesh, Bhutan, Nepal and eastern India) particularly in the areas of water resource management, energy development and trade and transport and commerce. A program for the preservation of Cultural Heritage in South Asia is being implemented in Bangladesh, India and Nepal to promote active involvement and financial support of the public, NGO, and private sectors to rehabilitate and protect national heritage sites.

The Third SAARC Summit held in Katmandu in the year 1987 decided to commission a study entitled "Causes and Consequences of Natural Disasters and the Protection and Preservation of the Environment". National Studies were undertaken and subsequently consolidated into a Regional Study, which was approved by the Sixth SAARC Summit in Colombo, 1991. The recommendations of the above Regional Study were considered by the Committee on Environment (held in February 1992), which identified the need for immediate action facilitated by measures for strengthening the environment management infrastructure; programs on environmentally sound land and water use planning; a research and action program on mountain development in the Himalayan Region; a coastal zone management program; a SAARC forestry and watershed program; programs on energy and environment; pollution control and hazardous waste management programs; a SAARC co-operative program for biodiversity management; programs for public participation in resource management; information exchange on low cost and environmentally sound habitat technologies; and the establishment of a SAARC relief and assistance mechanism for disaster and regional cooperation on the development of modern disaster warning systems. SAARC also presented a common position paper to the Fourth World Conference on Natural Disaster Reduction.

The Fourth SAARC Summit held in Islamabad in 1988 concluded that a joint study be undertaken on "Greenhouse Effect and its Impact on the Region". National Studies prepared by member states were consolidated into a regional study, which was approved by the Seventh SAARC Summit. A SAARC Environment Ministers Conference was held in New Delhi in April 1992 to evolve a joint position on the issues related to the UN Conference on Environment and Development (UNCED). A draft common SAARC position on Climate Change issues on the eve of the 1998 Buenos Aires meeting on Climate Change was adopted at the Meeting. The common SAARC position highlighted

the need for determination of equitable emission entitlements as well as the transfer of new and additional financial resources and environmentally sound technologies on concessional terms to developing countries. It expressed concern at the attempt of some Annex-I Parties (Industrialized Countries) to link ratification of the Kyoto Protocol to the introduction of new commitments for non-Annex-I parties, which will only delay the Protocol coming into force.

The Heads of State or Government expressed their deep satisfaction at the positive outcome of the Environment Ministers' Conference held in Male' in October 1997, and called for the effective and early implementation of the SAARC Environment Action Plan. In this context they welcomed the offer of Maldives to prepare a feasibility study on the establishment of a Coastal Zone Management Centre. The Heads of State or Government also committed their governments to prepare National Environment Action Plans and State of the Environment Reports before the end of 1998

SAARC Environment Ministers, who met in Colombo from 30 October to 1 November 1998 for their fourth annual Conference, adopted a common environment program for the region as a follow up on the SAARC Action Plan on the Environment. Chandrika Bandaranaike Kumaratunga, President of Sri Lanka and current Chairperson of SAARC, inaugurated the Fourth SAARC Environment Ministers‘ Conference. In her inaugural address, President Kumaratunga highlighted the environmental dimensions of development that would guide the governments in the region along a sustainable path to economic growth. She underscored the fact that SAARC region, which is home for nearly one fifth of the world population, was confronted with increasing levels of poverty, ill health, illiteracy, social instability and continued environmental degradation.

The SAARC Environment Ministers agreed to direct their focus to a single theme in each of their future meetings. They also agreed that Bio-Diversity should be the theme for the year 1999. The Government of India will host a Meeting on the trans-boundary movement of hazardous wastes and dumping of such wastes in the region by other countries. This Meeting would examine the implications of the effect of the Basel Convention for the SAARC countries and would also explore the possibility of harmonising policies and procedures with regard to hazardous wastes.

The Committee on Environment was designated as the Technical Committee on Environment (TC04) commenced functioning on 1st January 1993. TC04 has been instrumental in identifying measures for immediate action within the recommendations and decided on a number of modalities for their implementation. These include: improving climate monitoring capability through networking arrangement and through SAARC Meteorological Research Centre (SMRC); developing climate change and sea-level rise scenario through country specific studies and sharing of information data in this respect; making available to member states expertise on climate research and monitoring Greenhouse Gas emissions; identification of training and research institutions and ongoing programs; exchange of information and data; exchange of experience on strategies for developing, mitigating and adaptive responses to climate change.

TC04 also covers topics such as: Approaches to Environmental Legislation, Regulations and Standards in SAARC countries; Rehabilitation of Degraded Lands; a Training Course on Wetlands Assessment and Management; a Workshop on Alternate/Renewable Energy and Workshop of SAARC National Experts on Climate Change. The urgent need to establish a networking approach through identified nodal points/institutions has also been stressed.

11. REGIONAL AGREEMENTS

In the last several years, the South Asia region has taken steps towards establishing regional standards or norms for environmental protection through treaties, conventions and agreements.

Agreement on Establishing the SAARC Food Security Reserve (SFSR)

During the Third SAARC Summit (Katmandu, 1987), an Agreement on establishing the SAARC Food Security Reserve was signed. The Agreement, which came into force on 12 August 1988, provided for a reserve of foodgrains for meeting emergencies in member countries. The size of the reserve at present stands at 241,580 tonnes.

The SAARC Food Security Reserve Board comprises representatives from each member country and meets annually. The primary function of the Board is to undertake a periodic review and assessment of the food situation and prospects in the region including factors such as production, consumption, trade, prices, quality and stocks of foodgrains.

Agreement on SAARC Preferential Trading Arrangement (SAPTA)

The Ministers of Member States signed the Agreement on SAPTA on 11th April 1993, during the Seventh SAARC Summit. The initiative towards establishing SAPTA was taken during the Sixth SAARC Summit in Colombo in December 1991. This Agreement is an umbrella framework of rules providing for the step-by-step liberalisation of intra-regional trade. It envisages periodic rounds of trade negotiations for exchange of trade concessions on tariff, para-tariff and non-tariff measures.

SAPTA contains provisions giving Special and Favourable Treatment to the Least Developed Countries (LDCs) in the SAARC region. Additional measures in favour of LDCs are incorporated in Annex-I of the Agreement. Provisions for safeguard action and balance of payments measures are also incorporated in the Agreement to protect the interests of Member States during critical economic circumstances.

The Agreement on Preferential Trading Arrangement (SAPTA) signed in Dhaka on 11th April 1993 has accelerated the process of trade and economic cooperation in the region.

Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects for South Asia

The declaration recognises that there is a great possibility for increased air pollution and consequential phenomena due to the concentration of pollutant gases, acid rain or acid deposition. This declaration also implicitly recognises the impacts of such environmental problems upon on the health of humans and other living organisms in all our countries due to these man made and natural causes. In light of the potential for increases in transboundary air pollution as a corollary of air pollution in each country, the declaration states that countries shall continue the process in stages with mutual consultation to draw up and implement national and regional action plans and protocols based on a comprehensive understanding of transboundary air pollution issues. It declares that in pursuit of the above, institutional structures at the national level and countries themselves shall use the good offices of regional, international bilateral and multilateral agencies in this endevour.

12. IMPLEMENTATION OF GLOBAL CONVENTIONS

Over the last decade countries in the South Asia region have increasingly become signatories to international environmental agreements. Participation in these international agreements has also carried with it the obligation to institute adequate national measures for their implementation. Current developments demonstrate an increasing use of institutional and legislative mechanisms for this purpose. Recent environmental accords including the Montreal Protocol on Ozone Depleting Substances, the Biological Diversity and Climate Change Conventions, The Basel Convention, CITES and Convention on Migratory Species, impact upon a wide range of national interests and involve the participation of several national and sub-national administrative bodies.

Legislation has served as an effective instrument for implementing the obligations in a co-ordinated and cohesive way. To allow for the flexibility necessary for creating such co-ordinated administrative regimes, new environmental legislation usually specifies the principal concepts, obligations, rights and duties in regard to each Convention and leaves the detailed institutional arrangements to be specified in regulations. Many countries in the region have become parties to many of the international environmental instruments of global significance, but implementation of these conventions into domestic legislation has not been encouraging thus far. However, despite this initial reluctance this trend has slowly been changing.

At the national level, there is still a need for better scientific assessment of the ecological linkages between the conventions, identification of programs that have multiple benefits

and enhanced public awareness raising for the conventions. Only then will the impetus of implementation be stirred.

13. CONCLUSION

South Asia today stands at a crossroad. A decade after Rio, it is still ridden with poverty and natural resources degradation. On the other hand, immense latent potential exists within the member countries. There is a broad consensus on the thematic priorities of poverty eradication, managing population growth, conserving natural resources and building macro-economic stability. However the challenge is for more action and accountability at various levels.

On the social front are the unique diversity of traditional values, arts, crafts and cultural practices, besides modern industrial products, services and a pool of contemporary brainpower. On the environment front the sub-region is endowed with approximately 15% of the known biological wealth of the world. Finally on the economic front, besides being the second fastest growing region in the world, the sub-region also has the largest consumer base. The political will for cooperation supported by a robust operational mechanism can transform the sub-region into a strong and sustainable entity within the global community.

SOUTH ASIA ENVIRONMENTAL FACT SHEET

COMPARATIVE TABLE							
ITEMS	**BANGLADESH**	**BHUTAN**	**INDIA**	**MALDIVES**	**NEPAL**	**PAKISTAN**	**SRI LANKA**
Constitutional Status on Environmental Protection	Protection of monuments and heritage, right to protection from actions detrimental to life	Does not have a constitution.	Duty of the state and citizens to protect environment. After 73rd and 74th Amendment L S G s given executive powers on Environmental issues.	No direct reference to environment.	Duty of the state to protect environment, wildlife, forest and vegetation.	Environmental pollution and ecology brought in the concurrent legislative list in 1993.	Duty of the State and every person. After 1987, Amendment Provincial govt. & executive power to protect environment, nature and its riches.
Major Environmental Laws	Environment Conservation Act, 1995; Forest Act, 1927; Agriculture & Sanitary Improvement Act, 1920; Embankment and Drainage Act; and about 180 other laws having bearing on environment.	Environment Assessment Act – 2000; Forest & National Conservation Act, '95; and Mines Act 1997 address environmental issues	Environment Protection Act, 1986; Pollution Control laws and a plethora of approx. 200 environment-related enactments.	Law on Protection and Preservation of Envt.'93. Law on Fisheries '87. Law on Coral Mining '78, EIA guidelines and several related laws in operation.	Environment Protection Act, 1997 and about 25 other environment-related laws	Pakistan EPA 1997 and a web of other environment-related enactments.	National Environment Act '80; NEPA and Forest Conservation Act. Coast Conservation Act also in existence.

ITEMS	BANGLADESH	BHUTAN	INDIA	MALDIVES	NEPAL	PAKISTAN	SRI LANKA
Institutions Directly Responsible for implementation.	Ministry of Environment and Forest (MOEF)-created in 1989, Sectoral ministries/ departments	National Environmental Commission	Ministry of Environment and Forest (MOEF)-created in 1980, Sectoral ministries & Pollution Control Boards (both at State and Centre levels), State Department of Environment	Ministry of Planning Environment; National Commission for the Protection of the Env't and Ministries such as Planning, Human Resources and Envt. Fisheries etc. are responsible for implementation.	Ministry of Population and Environment; Environment. Protection Council; National planning Commission; sectoral ministries eg. Forest, Industries etc.	Ministry of Environment; Apex body-Central Environment Protection Authority. Local authorities oversee the local matters.	Ministry of Environment, Central Environmental Authority
Environmental Tribunals			Acts provide for Tribunals and Appellate Authority. The forest yet to start.			The EPA provides for Environment Tribunals which are to have exclusive jurisdiction to try serious violations.	

ITEMS	BANGLADESH	BHUTAN	INDIA	MALDIVES	NEPAL	PAKISTAN	SRI LANKA
Environmental Policies, Strategies and action Plans	National Environment Policy adopted in '92. Forestry Master Plan in '93 and National Conservation Strategy '92 & Envt'al Management Action Plan prepared in '96.	Environment policies include Paro Resolution on Environment and Sustainable Development, Bhutan's Sustainable Development Strategy, Framework Guidelines for EIA developed in '92.	No Comprehensive Environment Policies or Action Plan brought out so far but there are sectoral policies on pollution, land use, agriculture, forest, industrial etc. National Conservation Strategy on Environment and Development, 1992	No policy or action plan has been brought out so far but as a member of the Alliance of Small Island States (AOSIS), is working to address ocean level rise.	Forestry Master Plan, 1988. National Conservation Strategy, 1988 in operation. National Envt'al Policy Action Plan prepared in 1992.	National Conservation Strategy of Pakistan, Five Year Plans incorporate principles of sustainability	National Conservation Strategy adopted in '88 & National Envt'al Action Plan adopted in '91 National Policy on Industry and Env't issued in '96. National Forest policy adopted in 1996 Coastal Zone Mgmt Plan '90 – under revision.
Judiciary	The SC exercises writ jurisdiction. Locus standi widened: right to healthy environment is declared a Fundamental right but the Constitution bars the courts to pass stay orders stalling development projects.		The SC and HCs have been instrumental in developing PIL, providing effective remedies & developing environmental jurisprudence. Right to healthy, ecologically balanced environment declared as a Fundamental Right.	Role not very significant.	Exercises writ jurisdiction. Locus standi widened to deal with PIL's.	The SC and HCs exercise writ juris. Locus standi widened to deal with PIL and suo moto actions. Right to life expanded to protect people from envtal hazards; Right to clean and unpolluted water a FRt.	The SC and Court of Appeals exercise writ jurisdiction. Locus standi widened to hear PILs.

STATUS OF MAJOR GLOBAL ENVIRONMENT CONVENTIONS IN SAARC REGION

Country Status – Ratification
(* = Accession)

Country	CBD	Ramsar	UNCCD	UNFCCC	Kyoto Protocol	Vienna Convention/ Montreal Protocol	Basel Con-vention	CITES	CMS (came into force)
Bangladesh	3/05/94	21/09/92	26/01/96	15/04/94		1990* /1990*	1/04/93*	20/11/81	
Bhutan	25/08/95			25/08/95					
India	18/02/94	01/02/82	17/12/96	1/11/93		1991* /1992*	24/06/92	20/07/76	1982
Maldives	9/11/92			9/11/92	30/12/98*	1988* /1989	28/04/92*		
Nepal	23/11/93	17/04/88	15/10/96	2/05/94		1994* /1994*	15/10/96*	18/06/75*	
Pakistan	26/07/94	23/11/76	24/02/97	1/06/94		1992* /1992*	26/07/94*	20/04/76*	1/12/87
Sri Lanka	23/03/94	15/10/90	09/12/98	23/11/93		1989* /1989*	28/08/92*	4/05/79*	1/09/90

CHAPTER IV

COUNTRY PROFILE

1. GEOGRAPHICAL

Location:	Group of atolls in the Indian Ocean, south-southwest of India
Geographic coordinates:	3º 15‘ N, 73º 00‘ E
Geography:	1,190 coral islands grouped into 26 atolls (200 inhabited islands, plus 80 islands with tourist resorts); archipelago of strategic location astride and along major sea lanes in Indian Ocean
Area:	300 square kilometres
Land boundaries:	None
Coastline:	644 km
Maritime claims:	Measured from claimed archipelagic baselines -
	Contiguous zone: 24 nm
	Exclusive economic zone: 200 nm
	Territorial sea: 12 nm
Population:	301,475 (July 2000 est.)
Climate:	Tropical; hot, humid; dry, northeast monsoon (November to March); rainy, southwest monsoon (June to August)
Terrain:	Flat, with white sandy beaches
Elevation extremes:	*Lowest point:* Indian Ocean 0 m
	Highest point: Unnamed location on Wilingili island in the Addu Atoll 2.4 m
Land use:	*Arable land:* 10%
	Permanent crops: 0%
	Permanent pastures: 3%
	Forests and woodland: 3%
	Other: 84% (1993 est.)
Natural hazards:	Low level of islands makes them very sensitive to sea level rise

The Maldives consists of a chain of coral atolls, 80-120 km wide and 860 km long, located on the Lacadive-Chagos submarine ridge in the Indian Ocean. There are 26 natural atolls and the land is divided between 1190 islands of which 198 are inhabited. Historically, these islands have been divided into twenty administrative regions also known as atolls. Over 80% of the land area of these islands is less than 1 meter above mean sea level. Like most archipelagic states, the economy and the lifestyle of the Maldives is essentially maritime and marine-based. Until recently the lifestyles of the Maldivians had little direct impact on the environment. The main environmental impacts included the mining of coral and coral sand in the absence of other building materials and deforestation induced by the need for fuel wood. Despite the constraints of technical know-how, manpower and finances, the Maldivian Government has instituted appropriate policy legislation, regulatory and institutional measures for environmental planning and management. Environmental education and awareness have been given high priority by the Government and a number of initiatives have been taken in this area.

2. ENVIRONMENTAL ISSUES

Depletion of freshwater aquifers threatens water supplies; global warming and sea level rise; coral reef bleaching.

3. ENVIRONMENTAL - INTERNATIONAL AGREEMENTS

Party to*:* Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Hazardous Wastes, Ozone Layer Protection Convention. **Signed, but not ratified***:* Law of the Sea Convention.

4. LEGAL SYSTEM

Based on Islamic law with admixtures of English common law primarily in commercial matters; has not accepted compulsory ICJ jurisdiction.

Constitution: Adopted January 1998

Legislative branch: Unicameral People's Council or Majlis (50 seats; 42 elected by popular vote, 8 appointed by the president; members serve five-year terms)
elections: last held 20 November 1999

Judicial branch: High Court

5. LEGAL FRAMEWORK

Environmental Protection and Preservation Act, 1993; Environmental Impact Assessment (EIA); Fisheries Law of the Republic of Maldives, 87; Law on Uninhabited Islands (Law no: 20/98).

6. ECONOMY

Tourism, Maldives largest industry, accounts for 20% of GDP and more than 60% of the Maldives' foreign exchange receipts. Over 90% of government tax revenue comes from import duties and tourism-related taxes. Almost 400,000 tourists visited the islands in 1998. Fishing is a second leading sector. The Maldivian Government began an economic reform program in 1989 initially by lifting import quotas and opening some exports to the private sector. Subsequently, it has liberalized regulations to allow more foreign investment. Agriculture and manufacturing continue to play a minor role in the economy, constrained by the limited availability of cultivable land and the shortage of domestic labour. Most staple foods must be imported. Industry, which consists mainly of garment production, boat building, and handicrafts, accounts for about 18% of GDP. Maldivian authorities worry about the impact of erosion and possible global warming on their low-lying country, since 80% of the area is one meter or less above sea level.

7. KEY POLITICAL ISSUES AND GOVERNMENT'S INITIATIVES

A. INSTITUTIONAL RELATIONSHIPS

Steps

Strengthen and institutionalise the present Atoll Development Committees (ADCs)

Critical Agencies to be involved

Atoll officers, Atolls Ministry, Planning Ministry, President‘s Office

Country Resources Available

Infrastructure, some financial inputs, commitment

Regional Actions

Human resource development and capacity building

B. POVERTY ALLEVIATION THROUGH CAPACITY BUILDING OF COMMITTEES

Steps

Enable island development committees, clubs, and associations for social mobilisation i.e. this is a critical area around which these committees can be mobilised.

Critical Agencies to be involved

Island offices, Atoll offices, Atolls Ministry, Planning Ministry, President‘s Office

Country Resources Available

Infrastructure, administrative costs

Regional Actions

Share expertise, regional experience and resources for demonstration of SAPAP programmes

C. GENDER AND SOCIAL STRUCTURE

Steps

Empowerment and awareness-raising of elected Women‘s Committees and other NGOs for income generation and social mobilisation

Critical Agencies to be involved

Island offices, Atoll office, Atolls Ministry, Planning and Finance Ministry

Country Resources Available

Administrative support

Regional Actions

Assist in creating credit fund, capacity building experience, expertise

D. LOCAL RESOURCE MOBILISATION, EXPENDITURE FOR POVERTY ALLEVIATION, TRANSPARENCY AND ACCOUNTABILITY

Step 1

Create awareness amongst private entrepreneurs to contribute to local development efforts

Critical Agencies to be involved

Traders Association, Tourism Industry, Public/Private companies

Country Resources Available

Public/private sector

Regional Actions

Share experience of mobilising private sector funds for local development

Step 2

Allocate budgetary resources for community-planned (IDC, ADC, IWC) activities

Critical Agencies to be involved

Atoll offices, Atolls Ministry, Finance Ministry, Planning Ministry

Country Resources Available

Limited own funds

Regional Actions

Expertise and shared experience from outside

Step 3

Private sector investments for major infrastructure and income generating activities in partnership with CBOs (e.g. construction/operation of airstrips can be private)

Critical Agencies to be involved

Atoll offices, Atolls Ministry, Trade Ministry, Finance and Planning Ministries, President‘s Office, Maldives Chamber Of Commerce

Country Resources Available

Institutions and companies

E. LEGAL FRAMEWORK FOR DECENTRALISATION

Step 1

Policy consensus at all levels

Critical Agencies to be involved

All government agencies

Country Resources Available

Commitment

Regional Actions

Share experience and provide expertise

Step 2

Capacity building at all levels (some local institutions can help in this)

Critical Agencies to be involved

All government agencies, private sector, CBOs

Country Resources Available

Regulatory and legal framework, training and local institutions

Regional Actions

Exposure to outside training

Step 3

Strengthen accountability and transparency. Some framework already in place for example a government audit agency with wide-ranging power, and an anti-corruption board with the power to scrutinise all public funds.

Critical Agencies to be involved

All government agencies, private sector

Country Resources Available

Audit office, Anti- corruption board

Regional Actions

Experience, expertise

Step 4

Clearly defined roles and functions, i.e. a need to get rid of overlapping, and each line agency and each Island Committee should know exactly where the boundaries are.

Critical Agencies to be involved

Government agencies, communities, CBOs

Country Resources Available

Present roles and functions

Regional Actions

External Consultancy services needed

CHAPTER V

OVERVIEW OF CONSTITUTIONAL, LEGISLATIVE AND INSTITUTIONAL FRAMEWORK

LEGISLATIVE FRAMEWORK

Key Issues: Multiplicity of Legislation; Overlapping Provisions; Non- Compliance; Enforcement; Faulty Structure/Scheme of Legislation; Drafting Legislation; Lack of Provisions for Implementation; Inbuilt Enforcement Mechanism

Key Legislation: Environmental Protection and Preservation Act, 1993; Environmental Impact Assessment (EIA); Fisheries Law of the Republic of Maldives, 87; Law on Uninhabited Islands (Law no: 20/98)

Key Institutions: Ministry of Home Affairs, Housing and Environment; Ministry of Planning and Environment; National Environment Council; Ministry of Atolls Administration; Maldives Water and Sanitation Authority; Ministry of Fisheries, Agriculture and Marine Resources; National Commission for the Protection of the Environment; Ministry of Fisheries and Agriculture; Ministry of Tourism; Ministry of Health and the Ministry of Construction and Public Works;

1. INTRODUCTION

The main legislative instrument for the protection of the environment in the Maldives is the Law on the Protection and Preservation of the Environment (Law No. 4/93). The purpose of this law is set out in its preamble, which states that the natural environment and its resources are part of a national heritage that needs to be protected and preserved for the benefit of future generations. Further, it is stated that the protection and preservation of the country‘s land and water resources, flora and fauna, beaches, reefs, lagoons and all natural habitats are important for the sustainable development of the country. Law No. 4/93 established a framework upon which regulations and policies can be developed to protect and preserve the natural environment and resources for the benefit of future generations.

The Environmental Protection and Preservation Act, approved by the Citizen's Majilis in April 1993, provides the Ministry of Planning, Human Resources and Environment with wide statutory powers of environmental regulation and enforcement.

Law No: 4/93 Environmental Protection and Preservation Act provides the umbrella framework for the protection and preservation of the Environment. The Act defines the

environment as _all living and non-living things that surrounds and effects the lives of human beings‘.

2. LEGISLATION

The government has adopted appropriate sectoral policies covering areas such as fresh water resources, and waste management. Coral mining on reefs surrounding inhabited islands is prohibited.

The Act empowers the Environment Ministry to establish and administer protected areas and prohibits the disposal of oil, waste, poisonous gases or anything else which could be harmful to the environment within the territory of the Maldives. The Act also regulates the disposal and transboundary movement of hazardous wastes.

Different provisions of the Act are:

Section 5

An impact assessment study shall be submitted to the Ministry of Environment before implementing any development project that may potentially impact the environment. The Ministry of Environment shall formulate the guidelines for Environmental Impact Assessments (EIA) and shall determine the projects that need such assessment as provided in the Section.

Under this Section EIA guidelines have been drafted with the help of assistance from the UNDP and are now in force.

Section 6

The Ministry of Environment has the authority to terminate any project that has any un-desirable impact on the environment. A project so terminated shall not receive any compensation.

Section 11

A _project‘ is any activity that is carried out with the purpose of achieving a certain social or economic objective.

Section 3

The Ministry of Environment shall be responsible for formulating policies as well as rules and regulations regarding the environment in areas that do not already have a designated Government authority already carrying out such functions.

The above provisions call for the scrutiny of the other legislative provisions regarding the management of the environment.

Environmental Impact Assessment

Environmental Impact Assessment (EIA) has been made mandatory for large scale projects in the Maldives through the Environmental Protection and Preservation Act (4/93). The legislation provides the basic framework for the EIA process in the country and the EIA procedures are laid out in the form of guidelines. According to article 5 (a) of the Act, an impact assessment study shall be submitted to the Ministry of Planning, Human Resources and Environment before implementing any activity that may have an impact on the environment. Article 5 (b) states that the principles of EIA and the projects that require an EIA shall be determined by the Ministry of Planning, Human Resources and Environment. To streamline and facilitate the EIA process in the country, the Ministry developed a set of guidelines outlining the procedures for EIA and these were approved by the Cabinet in December 1994.

3. RELATED AREAS AND LEGISLATION

Fisheries and Marine Resources

Law No: 5/87 Fisheries Law of the Republic of Maldives as stated earlier governs the area of living marine resources. This law defines ―fishing" as the taking out, extraction of any living marine resource, or any effort to take out, extract any living marine resources from within the EEZ of the Maldives.

Section 3

The Ministry of Fisheries, Agriculture and Marine Resources has the discretion to regulate the area of Fisheries in the Maldives.

The Ministry of Fisheries, Agriculture and Marine Resources shall monitor the activities of fishing within the Maldives and shall formulate and implement policies and activities for the development and advancement of fisheries.

The Act further states that the Ministry of Fisheries shall regulate fishing by foreign vessels within the EEZ of the Maldives as well as fisheries-related research activities. Further, Section 10 of the Act empowers the Fisheries Ministry to declare as protected any living marine resources deemed necessary. There is no specific law on the issue of pollution. Legal protection is given of different aspects and areas of pollution by different legislation. Law No. 7/96 the Wreckage Law of the Maldives deals with the area of marine pollution from wrecked or sunken ships.

Section 14 (b) gives the Ministry of Transport and Civil Aviation power to fine the owner of any ship that has been wrecked or sunken in Maldivian waters where any material which is potentially harmful to the environment is spilled into the sea either by a deliberate act or by wilful negligence. The Act provides, where the Government has incurred any costs in cleaning any such material, then that cost should be refunded to the Government by the owner.

Sub-section (c) states that where any damage to the environment is caused by any activity of the owner of the vehicles, they shall compensate such damage. All three sub-sections of section 14 are administrative procedures and are not referred to adjudication.

CHAPTER VI

NATIONAL ENVIRONMENT GOVERNANCE

Key Issues: Institutional relationships; Poverty alleviation through capacity building of committees; Gender and social structure; Local resource mobilization; expenditure for poverty alleviation, transparency and accountability; Legal framework for decentralization; Land Resources; Coral Reefs; Sea Level Rise; Population Density; Marine Resources; Marine biodiversity; Sand Mining; Environment Education; Capacity Building;

Policy Framework: National Environment Action Plan; Male Declaration, 1998

Key Legislation: Environmental Protection and Preservation Act, 1993; Environmental Impact Assessment (EIA); Fisheries Law of the Republic of Maldives, 87

Key Institutions: Ministry of Home Affairs, Housing and Environment; Ministry of Planning and Environment; National Environment Council; Ministry of Atolls Administration; Maldives Water and Sanitation Authority; Ministry of Fisheries, Agriculture and Marine Resources; National Commission for the Protection of the Environment; Ministry of Fisheries & Agriculture; Ministry of Tourism; Ministry of Health and the Ministry of Construction & Public Works; Ministry of Tourism

1. INTRODUCTION

The environment sector was formally recognised as an entity within the Government in 1984, with the creation of an Environment Affairs Division in Ministry of Home Affairs and Social Services. In late 1988, environment was given elevated status, being combined with the then Ministry of Planning and Development to form the Ministry of Planning & Environment, the rationale for this move being that environmental considerations need to be fully and efficiently integrated into development planning within the country. As part of a government re-organization in 1993, the Ministry was given additional responsibility of human resources development, and was renamed the Ministry of Planning Human Resource and Environment. In 1998, environmental administration was transferred to the Ministry of Home Affairs, Housing and Environment. Important institutions dealing with environmental issues are:

- Ministry of Planning and Environment;
- National Environment Council;
- Ministry of Atolls Administration;

- Maldives Water and Sanitation Authority;
- Ministry of Fisheries and Agriculture;
- Marine Research Section;
- Selected Islands Development Unit

The Government of Maldives places environment as one of its top development issues on its agenda. The delicacy of the ecological system of the islands and vibrant role played by tourism and other natural resource based industries in the economy calls for sustainable development & environmental management to be given a key post on the agenda.

Key issues are:

- Degradation of freshwater/land resources;
- Human population pressure;
- Coral and sand mining - Low capacity of reef to act as natural sea defences;
- Destruction of biodiversity;
- Sea levels rise;
- Waste management;
- Complex land tenure system;
- Shortage of human resources; and
- Weak institutional capacities to enforce environment protection and legislation.

2. ENVIRONMENT POLICY AND INSTITUTIONAL FRAMEWORK

The Government recognizes that sustainable development in the Maldives will not be possible without the maintenance of environmental health and quality and in particular, the maintenance of a productive marine environment. This recognition underlies the principle aim of the National Environment Action Plan which is: "To help the Government of the Maldives to maintain and improve the environment of the country, including the marine and ocean area contained within the Exclusive Economic Zone, and to manage the resources contained therein for the collective benefit and enjoyment of present and future generations."

The Ministry of Planning, Human Resources and Environment is designated as the responsible body for formulating policies, rules and regulations regarding the environment, and empowers the Ministry to levy fines of up to one hundred million Rufiya (10 million US $) for breaches of the law.

Sustainable development is the overall development policy of the Maldives. The Ministry of Home Affairs, Housing and Environment is responsible for developing all aspects of

environmental policy and enforcement of the Environment Protection and Preservation Act. The Ministry also acts as the Secretariat for the National Commission for the protection of the Environment. The Environment Section deals with all issues of the environment including global environmental issues. It administers and co-ordinates with other government offices, advises on environmental aspects and undertakes programmes to raise public awareness on environmental issues. The Environment Section also acts as the focal point for both national and international activities. The Environment Research Centre of the Ministry of Home Affairs, Housing and Environment is responsible for assembling the necessary environmental information required for planning and management.

The National Commission for the Protection of the Environment (NCPE) which was appointed by the President in 1989 advises the Minister for Environment on issues related to the responsibilities stated above. The mandate for the NCPE includes:

- Involvement in assessment, planning and implementation of activities of the Maldives that affect the environment and activities to protect the environment;
- Advising on tackling environmental problems; and
- Ensuring that an environmental protection component is included in development projects.

The Commission is composed of high-level representatives from relevant Government Departments. The Minister of Home Affairs, Housing and Environment chairs the NCPE.

Other Government Departments having a mandate over environmental issues are the Ministry of Fisheries and Agriculture, the Ministry of Tourism, the Ministry of Health and the Ministry of Construction & Public Works. The Ministry of Fisheries, Agriculture and Marine Resources has the mandate to govern the areas identified in its name. The Ministry of Tourism has an overall mandate over the area of tourism and its development. The Ministry of Health in the present context deals with integrated water resources and disposal of sewage, while the Ministry of Construction and Public Works administers the area of waste disposal and developmental projects like dredging.

At the Provincial level, the Ministry of Atolls Administration has a wide mandate for the administration of all inhabited islands except the Capital City. The Maldives is divided into 20 administrative atolls. These atolls are each headed by the Atoll Chief who takes his orders from the Minister of Atolls Administration. Each island has an Island Chief and/or his assistant accountable to the Atoll Chief and the Ministry of Atolls Administration. While the Atoll Chief has the mandate for the whole atoll it is the Island Chief who is responsible for the administration of the island office and for other affairs of the island. Different personnel handle health and Justice. All other administrative work is handled through the institutional structure of the Ministry of Atolls Administration. (i.e. the Atoll office and Island Office).

3. MALÉ DECLARATION

Air pollution is an emerging environmental issue in Asia and the impact of air pollution on human health is increasingly being reported in the region. At the initiative of the United Nations Environment Programme, senior government officials and experts on air pollution from South Asian countries met at the Asian Institute of Technology, Bangkok, Thailand and agreed on a draft declaration to promote regional cooperation in the area of pollution. On 22 April 1998, the Malé Declaration on Control and Prevention of Air Pollution and its likely Transboundary Effects for South Asia was discussed and adopted by Ministers of Environment at the seventh meeting of the Governing Council of South Asia Cooperative Environment Programme (SACEP), in Malé.

The Maldives is fully committed to implementing the Malé Declaration. The Ministry of Home Affairs, Housing and Environment has been designated as the national implementing agency for the Malé Declaration. On 3 May 1999 the National Implementing Agency entered into an agreement with United Nations Environment Programme / Environment Assessment for Asia and the Pacific to prepare a baseline study on air pollution and a national action plan. This Action Plan, aimed at implementing the Malé Declaration, has been developed with the assistance of the United Nations Environment Programme.

4. LEGAL FRAMEWORK

The government has adopted appropriate sectoral policies covering areas such as fresh water resources, and waste management. Coral mining on reefs surrounding inhabited islands is prohibited.

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5. ENVIRONMENTAL IMPACT ASSESSMENT

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Sub-section (c) states that where any damage to the environment is caused by any activity of the owner of the vehicles, they shall compensate such damage. All three sub-sections of section 14 are administrative procedures and are not referred to adjudication.

7. INTERNATIONAL CONVENTIONS

The Maldives is Party to the UNFCCC, Convention on Bio-diversity, United Nations Convention on the Law of the Sea, Vienna Convention for the Protection of the Ozone Layer, Montreal Protocol on Substances that Deplete the Ozone Layer, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

Apart from the Convention of the Law of the Sea, the Ministry of Home Affairs, Housing & Environment has the obligation to administer all other Conventions. There are two projects currently being implemented by the Environment Section: one for the implementation of the UNFCCC, and other for the Convention on Bio-diversity.

8. CAPACITY BUILDING

The acute shortage of human resources is a major constraint to the development of the Maldives. This is particularly true in the environmental technical and professional areas. In the area of pollution prevention and control, there are no trained local professionals and this is an issue that needs to be addressed as a top priority.

At present, there is also a lack of technical equipment to monitor and assess air pollution and this is another issue that needs to be addressed urgently in order to build the necessary capacity for air quality monitoring and air pollution prevention.

In human resource development, priority is given to developing and enhancing local expertise through tertiary level training and specialised short-term training. In addition to training Government staff, capacity building efforts are also focused on the private sector and NGOs. Raising public awareness is also a key component of the capacity building initiative.

Other initiatives in this area (either suggested or underway) include:

- Conducting a national training workshop on the science, impacts and policy aspects relevant to air pollution;
- Conducting a short term technical training programme on air quality monitoring.
- Developing the infrastructure and facilities for regular air quality monitoring and emissions monitoring;
- Strengthening the Traffic Police Department and other enforcement agencies through appropriate training programmes to enhance their capacity to strictly enforce regulations and standards;
- Promoting awareness among motorists and vehicle owners on the benefits of regular vehicle maintenance;
- Developing and implementing a public awareness campaign and publish an air pollution index regularly.
- Conducting a comprehensive study to develop a long-term vehicular air pollution management programme; and
- There is an urgent need for initiatives in the direction of resource conservation, marine biodiversity and fresh water sustenance.

CHAPTER VII

SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: WATER

Key Issues: Water Pollution; Water quality Management; Marine Pollution; Drinking Water; Human Health

Policy Framework: National Environment Action Plan

Key Legislation: National Environment Action Plan; Environmental Protection and Preservation Act, 1993; Environmental Impact Assessment (EIA), 1994; Fisheries Law of the Republic of Maldives, 87

Key Institutions: Ministry of Home Affairs, Housing and Environment; Maldives Water and Sanitation Authority; Ministry of Tourism

1. INTRODUCTION

The water resources of the Maldives comprise of fresh groundwater that occurs in the porous coral sediments on many islands of the Maldives. The population of Maldives has traditionally been dependent on groundwater from shallow wells dug in the ground. It has been estimated that currently 25% of the population depends on groundwater for drinking while the rest of the population uses rainwater and desalinated water for drinking, and groundwater for other purposes. The quality of groundwater varies seasonally and across the islands.

The superficial hydrogeology of the groundwater aquifers result in susceptibility to pollution by sewage, chemicals and pathogens. Water quality testing carried out to date shows that bacterial contamination of point source water supplies (dug wells) is widespread and that faecal contamination exists in many of these sources on the inhabited islands. The level of faecal contamination is higher on the more densely populated islands, Malé being regarded as having the highest level of bacterial contamination of groundwater aquifer.

However, the controlling factor is not the size of the population of the island, but the house plot size in combination with the presence of cesspits and their interaction with the groundwater aquifer. On the basis of WHO drinking water guidelines, there are few groundwater sources in the Maldives fit for use without disinfection. The microbiological

quality of well water in many growth centres of the Maldives is usually above 50 coliforms per 100ml which renders the water even unfit for bathing under World Health Organisation recreational or bathing water quality guidelines. Improper sewage disposal facilities are the major cause of poor groundwater quality in these islands.

During early 2000 about 60% of the wells in the country were reported to have freshwater (Maldives Water and Sanitation Authority). The groundwater in Malé is severely depleted. In the past, the 5600 household wells have been supplying the water needs of the population of Malé. At present the water provided by these wells is so saline that it is not fit even for bathing and washing purposes. The situation is further aggravated by the amount of chemicals in the water such as hydrogen sulphide and hydrocarbons. A recent chemical analysis of ground water in Malé shows that it contains high amounts of nitrates and sulphates. In a few wells ammonia was detected at elevated levels (0.4 - 0.6 mg/l) indicative of sewage pollution and raised pH levels (7.5 - 8.0) tended to confirm that the results were significant. Hydrogen sulphide or sewer gas has also been a major threat to well water users in Malé resulting in acute poisoning of two people and the death of one person in 1997.

Hydrogen sulphide makes the water stink and poses different health risks at different levels of exposure. Many household wells have shown elevated levels (0.5 to 3.5 ppm in water and above 100 ppm in the air) of hydrogen sulphide. Hydrogen sulphide in the sewers has also been a major problem for people living near pumping stations around Malé. The situation has improved in many areas since household venting started in 1999. Hydrogen sulphide has also been detected in some wells in Kulhudhuffushi and Hithadhoo, the designated growth centres under the first Regional Development Project. The quality of groundwater in Gan, Addu Atoll has also rapidly declined in the past few years. Gan has a few garment factories and a regional airport. However, as almost all general purpose water used on Gan originates from two boreholes located on the western side of the island, there is excessive extraction beyond demand. Leakages in the distribution network also contribute to the problem in Gan. Increased extraction exceeding natural recharge through rainfall has dramatically depleted the freshwater lens in Malé and other populated islands. This increased extraction is linked with technology and lifestyle. Although many households in Malé and in other islands of the Maldives use low flush toilets and other water saving devices, water conserving lifestyles can be said to be rare.

In many islands, rainwater is mainly used for drinking and cooking purposes. Recent and past water quality tests on rainwater have shown that rainwater in the Maldives is of acceptable potable quality. However, a full analysis of rainwater may be required before the impacts of trans-boundary air pollution can be assessed. Many people practice safe collection and storage of rainwater. However, there have been a few incidents when rainwater has been tested positive for faecal coliforms. Rainwater is hardly disinfected, and very few people boil it. Rainwater collection is also encouraged on resort islands by the Ministry of Tourism to reduce the need for desalination.

Desalination or desalting became necessary when the sustainable yield of the existing groundwater aquifer on some islands was exceeded. Desalinated water is now supplied to almost all households in Malé and Villingilli, the fifth ward of Malé. Malé produces about 4,000 tonnes of desalinated water everyday using the reverse osmosis (RO) process to serve a population of about 74,000 people. At present, Kandholhudhoo is the only other inhabited island that is served with desalinated water via taps in standbays. The need for desalination arose during the dry season of 1998 when the inhabitants of Kandholhudhoo had to fetch water from nearby islands. Kandholhudhoo, the most densely populated island in the Maldives, is served by a reverse osmosis desalination plant with a capacity of 50 cubic meters. The island community operates and maintains the plant. When the population of Kandholhudhoo was served by desalinated water in May 1999, about 28% of the population of the Maldives had access to desalinated water and over 20% of the population almost entirely depended on desalinated water. All tourist resorts rely on desalination to cater for their water needs as the island aquifers could not be tapped and also would not provide sufficient yield. In most resorts, a total production capacity based on 250 litres per capita per day is established.

2. MAJOR POLICY RESPONSES AND INITIATIVES

To face the challenges, an integrated national water resources management master plan is to be developed, in addition to the development and strengthening of monitoring and assessment capabilities. However, this process is currently in its draft stages. Draft regulations on water supply, plumbing, waste disposal, sewerage systems, etc. have been developed. Desalination plants cannot be installed and operated in the country without written permission from the Maldives Water and Sanitation Authority (MWSA). Therefore, a draft standard for the operation and maintenance of desalination systems has been developed.

Strict measures are in place to reduce the amount of pumping for excavation and foundation works. As such, dewatering guidelines have been developed. The tourism regulations have ensured that the groundwater lens of newly developed resort islands are truly conserved and protected. All restaurants and cafes are required to have grease/oil traps according to MWSC specifications. Optimizing rainwater catchment is a priority policy for the government. Rainwater collection tanks are procured and delivered at public and household levels. Household/private tanks are sold on a monthly instalment basis.

In 1995, the Government of the Maldives transferred the water supply and sewerage management of the city of Malé from the Maldives Water and Sanitation Authority (MWSA) to a private company, Malé Water and Sewerage Company Ltd. (MWSC), which was set up for this purpose. MWSC is a joint venture company with Government majority shareholding. In order to protect the interests of consumers as well as the environment, the Maldives Water and Sanitation Authority was given the mandate to act as a regulatory body for the company. The regulatory body is responsible for setting

standards and regulations for water quality in the Maldives and to monitor and enforce them.

MWSC is improving the performance of the existing sewerage system in Malé. Efforts are underway to reduce the level of hydrogen sulphide gas in sewers by sewer ventilation. Leaking catchpits are being replaced with plastic (HDPE) ones to ensure strength and longevity and to virtually eliminate leaks and reduce groundwater contamination. Local traders are introducing different water saving devices into the country. Energy efficient technologies are also being introduced. However, currently there are no tax cuts on environment safe or environmentally friendly products.

Inappropriate selection of excreta disposal methods coupled with lack of management skills at community level has resulted in ill-health or other related problems. Small bore sewerage systems installed on 7 islands have had several problems related to design, construction and maintenance. Water quality surveillance is given special focus by the Maldives Water and Sanitation Authority. The Public Health Laboratory carries out daily tests on desalinated water produced in Malé and Villingilli by MWSC. Water test kits have also been provided to regional hospitals. Appropriate training on how to use these test kits have also been given to concerned persons at the Regional Hospitals. Bathing water quality in Malé Swimming Track (or fathaa sarahaddu) is tested regularly to protect swimmers who swim in the area, which is close to sewer outfalls for PS2 and PS9 behind Dharubaaruge. At times when faecal contamination exceeds 100 per 100ml, notice has been given. Water quality monitoring is also carried out for 64 groundwater wells in Malé and water resources of selected islands of selected atolls are assessed every year. A storm water management system is being developed by the Ministry of Home Affairs, Housing and Environment. However, the health concerns of such a plan have not been adequately addressed. The water and sanitation component of the Regional Development Project would provide the venue and forum for detailed investigation and understanding of appropriate technologies and means of water supply and sanitation.

CHAPTER VIII

SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: ATMOSPHERE

Key Issues:
Transboundary; Pollution; Vehicular pollution, Indoor Pollution; Human Health
Policy Framework:
National Environment Action Plan
Key Legislation:
Malé Declaration; Environment Protection and Conservation Act, 1997;
Key Institutions:
Ministry of Home Affairs, Housing and Environment

1. INTRODUCTION

The air quality of the Maldives is generally considered to be good and is in a pristine state. As the islands of the Maldives are small, the sea breezes flush the air masses over the islands and keep air over the islands fresh from the sea. However, recently it has been observed that transboundary air pollution is affecting the air quality of the Maldives. Local air pollution in Malé is also a growing concern. Transboundary air pollution in the Maldives became first known in 1997, when large parts of the country were affected by haze caused by forest fires in Indonesia. The haze layer blanketed the country between October 1997 and December 1997 and significantly affected the routine lives of the Maldivians. The actual state of the transboundary movement of air pollutants over the Maldives was measured in the Indian Ocean Experiment (INDOEX). INDOEX was carried out by a team of more than 200 international scientists and was led by the Centre for Clouds, Chemistry and Climate (C4) of the University of California. INDOEX results showed widespread pollution over large sections of the Indian Ocean.

2. VEHICULAR POLLUTION

As a means of reducing the traffic problems and improving the air quality in Malé, in December 2000 the Government banned import of reconditioned motorcycles which have an engine capacity of less than 150 cubic meters. Similarly, a ban was introduced on the import of cars more than 5 years old. In 1998 and 1999, the Maldives contributed to the Indian Ocean Experiment (INDOEX) which was carried by an international group of scientists. A climate observatory was established at Kaashidhoo in 1998 as part of the Indian Ocean Experiment (INDOEX). The station was developed as a model station for frontline atmospheric research in the tropics. It was aimed at providing an excellent venue

for scientists to study a range of critical issues of general interest to the climate research community. The station was shut down in July 2000 due to technical problems. The observatory is planned to be relocated to Hanimadhoo to continue the climate research under the second phase of INDOEX as Asian Brown Cloud (ABC) with assistance from UNEP. This station will monitor the impact of pollutant emissions in the region

In March and April 1999, the scientists were surprised to find a dense brownish pollution haze layer stretching an area of more than 10 million square kilometres over the Indian Ocean tropical region. Because of the pollution, visibility over the open ocean dropped below 10 km, a visibility that is typically found near polluted regions in the eastern United States and Europe. Local air pollution in Malé is mainly due to particulate emission from vehicles, power generation, and construction related activities. Particulate includes a range of materials such as soot and coral dust. High rise buildings and congestion in Malé has disrupted cross circulation of air and emissions from the increasing number of motor vehicles on the roads, which is deteriorating the urban air quality of Malé.

Although the pollution is visible at certain times, no numerical measures of the level of pollution are available. Elevated particulate levels are implicated in a range of respiratory problems such as asthma, allergic respiratory responses, bronchitis and emphysema. The Health Master Plan identifies outdoor air pollution as a major contributor to respiratory problems in the Maldives. From the health records, it is seen that the number of cases reported with respiratory problems has been on the increase for the past 5 years.

Land transport exerts pressures on the environment in many ways. Vehicles emit carbon dioxide, carbon monoxide, oxides of nitrogen, sulphur dioxide, lead, particulate materials and volatile organic compounds (VOCs). Traffic noise is also a nuisance associated with land transport. In a period of not more than two and half years from 1996 the population of vehicles registered in the Maldives more than doubled. Cars represent a very significant number among the registered vehicles and in 1994, 128 new cars were registered and this grew to 315 in 2000 (MPND, 2001). From 1990, the import of motorcycles has increased at an average of 14% per annum. In 2000 alone, 1860 motorcycles were registered. The small size of the islands and infancy of the land transportation sector has limited the land transport system mainly to Malé and some regional growth centres such as Hithadhoo and Kulhudhuffushi. The increased use of vehicles in Malé is causing not only congestion on the narrow street system but is deteriorating the urban air quality as well.

3. STRATEGIES

The aim of the Action Plan is to establish the necessary framework for addressing air pollution to protect the environment. The Government of Maldives will achieve this through a combination of legislation, regulation, voluntary initiatives and economic instruments. Finding effective ways of preventing air pollution in the Maldives requires

commitment and concerted action from all Maldivians, regional neighbours and the international community.

The following strategies are suggested:

- Incorporate air pollution prevention into national legislation
- Develop and implement policies for air pollution prevention
- Develop and implement innovative pollution prevention programs
- Develop guidelines, standards and codes of practices to ensure implementation of pollution prevention measures at operational level
- Assess and monitor air pollution levels and its impacts
- Educate the public on pollution prevention and promote sustainable lifestyles
- Build the institutional capacity through training relevant groups in the technical aspects of pollution prevention and by acquiring the necessary tools
- Advance transboundary air pollution prevention through regional protocols and agreements.
- Participate in international air pollution prevention initiatives.

4. ACTIONS, POLICIES AND MEASURES

In order to achieve the aim and in accordance with the strategies of the action plan, specific actions will be undertaken to address the issue of air pollution:

- National Strategy for Action;
- Regular monitoring of air pollution;
- Assessment of the impacts of air pollution on human health and assets;
- Prevention and management of air pollution at the source level;
- Development of suitable coordinating mechanisms for the successful implementation of the Action Plan; and
- Capacity building through the development of suitable training and educational programmes to enable the Government to effectively implement all aspects of the Action Plan.

All components of this Action Plan are interdependent and provide a framework for comprehensive action that should contribute to the control and prevention of air pollution and achieve sustainable development. No component should be seen as an end in itself.

5. MAJOR POLICY RESPONSES AND INITIATIVES

As air pollution is an emerging environmental issue in South Asia, on the initiative of United Nations Environment Programme, a declaration to promote regional co-operation in the area of air pollution was agreed in 1998. The Malé Declaration on Control and Prevention of Air Pollution and its likely transboundary effects for South Asia was adopted by Ministers of Environment at the seventh meeting of the Governing Council of South Asia Co-operative Environment Programme (SACEP) in Malé. In 2001, the Government adopted *'Addressing Air Pollution - National Strategy for Action'* with the aim of establishing the necessary framework to address air pollution to protect the environment of the Maldives.

The action plan calls for regular monitoring of air pollution and to assess the impacts of air pollution on human health and assets, introduction of preventive and management measures for air pollution at the source level, development of suitable coordinating mechanisms for the successful implementation of the air pollution action plan and for building adequate capacity to address the issue of air pollution.

CHAPTER IX

SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: CHEMICALS AND WASTES

Key Issues: Hazardous Waste Management; Air Pollution; Water Pollution; Soil Contamination; Safety and Health; Emergency Plans, Public Liability and Compensation; Enforcement and Compliance; Education and Awareness; Social Audit of Industry;

Policy Framework: National Environment Action Plan I & II

Key Legislation: National Environment Action Plan; Environment Protection and Preservation Act, 1993;

Key Institutions: Ministry of Home Affairs, Housing and Environment; Ministry of Planning and Environment; National Environment Council; Ministry of Atolls Administration; Maldives Water and Sanitation Authority

1. INTRODUCTION

A major pressure on the environment arises from the wastes and pollutants produced as a by-product of domestic and industrial activities, and solid waste disposal is now one of the most critical environmental issues in the Maldives. The amount and rate of solid waste generated varies throughout the country and there is a significant difference between the amount of waste generated in Malé and that in the atolls. The amount of solid waste generated in Malé has been increasing at an alarming rate over the past 10 years. Solid waste generated almost doubled within the period 1990 to 1995 and in the next five years (1995 to 2000) the amount of waste generated increased by eightfold. On average, 2.48 kg of waste are generated per capita per day in Malé while in the atolls this value is around 0.66 kg of waste per capita per day. Average waste generation in the resorts stands at 7.2 kg per guest per day. The rapidly developing construction industry is contributing significantly to the composition of the waste.

The large quantity of waste generated coupled with limited land area and technology makes the disposal of waste a challenge for the country. Until 1991, solid waste generated in Malé was used for land reclamation. Presently, solid waste generated in Malé is collected and taken to a transfer station. From the transfer station, the waste is transported to Thilafushi, a municipal landfill, located 5 km away from Malé. The Thilafushi landfill site has now become a landfill for the entire central region of the country. In addition to

waste from Malé, it now receives waste from islands in Malé atoll, the resorts and the Malé International Airport. Solid waste generated in the atolls is disposed using various methods. Organic wastes are composted in home backyards in most of the islands.

Non-biodegradable waste such as plastics are dumped near the beach in many islands and buried in a few islands. Burning of combustible waste at designated areas in the islands is also widely practiced on many islands. Current waste disposal practices adversely affect the environment through habitat destruction and pollution. Often, wetland areas such as swamps and mangroves are considered as "useless" areas and therefore dumping of solid waste in such areas is acceptable practice and reclamation of such areas to increase land space often takes place. Dumping of solid waste near beaches also has adverse effects on the reefs and lagoons of the islands.

2. HAZARDOUS WASTES

The amount of hazardous waste generated in the Maldives is very small. In 1998, it was estimated that 0.4 tons of hazardous waste was generated daily in Malé. Though figures for hazardous waste generated for the atolls have not been estimated, it is believed that the generation of hazardous waste would be very small. Hazardous waste mainly includes clinical wastes and waste oil from electric generators and vehicles. At present, hazardous waste generated in Malé is transported to Thilafushi. Like many small coastal communities of the world, Maldivians also traditionally used ~~t~~the bush or the beach" for human excreta disposal. A designated area in the household backyard for shallow burial of faeces (handas buri or gifili) and defecation along the beach (athirimathi) have been common practices in the past. These practices, especially the defecation in the gifili, are known to damage the environment through contamination of groundwater aquifers that are directly used (especially during the dry period) for potable purposes.

3. MUNICIPAL WASTE

One of the main concerns surrounding such sewage or excreta disposal practices in the past was the morbidity and mortality from diarrhoea, which still continues to occur. With the construction of water tanks both in Malé and the atolls, the introduction of a comprehensive sewerage scheme in Malé, and intensive health education on the use of oral dehydration, the situation has improved tremendously. Deaths from diarrhoea have dropped considerably, although the morbidity situation has not improved significantly. Serious epidemics of diarrhoea occurred in 1978 (Cholera) and in 1982 (Shigella) claiming several lives. The cholera epidemic affected 50% of the islands with more than 15000 cases reported and 200 deaths. Between 1992 and 1993, there was a reduction in the reported cases of diarrhoea in the country as a whole. Although almost universal access to sanitation has been achieved in Malé and a comprehensive sewerage system is in place, there are critical design and long-term maintenance concerns that have contributed to rapid faecal contamination of Malé groundwater aquifer. Malé Water and Sewerage Company is working to rectify these problems and bring the system to an acceptable level of performance.

Pollutants reaching the water resources – especially groundwater aquifers – come from both point and non-point sources. Point sources that mainly include sewage disposal and discharges from sub-industrial activities have contributed to contamination of groundwater aquifers in Malé and other industrial or populated islands. A study carried out by MWSA in Malé showed that petro-chemical pollution of the groundwater aquifer is quite prominent in many areas of Malé. This pressure is due to vehicle washing garages and engine repair and maintenance workshops scattered all over Malé. Oil spillages there had contaminated the ground water to the point where tests conducted by MWSA showed the water at the area unfit for any use (MWSA, 1995). The scale and significance of water pollution problems caused by power stations and oil storage on other islands has yet not been assessed so far. However, spillage has also been observed in many oil handling areas (such as in powerhouses) on other.

The agricultural sector in the Maldives does not use a significant amount of chemical fertilisers or pesticides. Thus groundwater and seawater contamination from agricultural run-off is at present not a problem. In the last few years there has been a marked increase in the amount of fertilisers and pesticides used although it is not significant overall.

Issues facing coastal waters are mainly related to disposal of untreated sewage and wastewater effluent. Of the seven islands provided with central small bore sewerage systems, only three islands have a secondary treatment facility (i.e. septic tanks). The rest dispose raw sewage into the coasts making coastal waters unsuitable for bathing or general use. In Malé, the capital, sewage is disposed untreated into the nearshore waters via nine outfalls at six locations. The pollution load from these sewer outfalls probably exceeds the dilution capacity of the receiving waters. The Malé sewers not only carry sewage but also different chemicals and potentially harmful substances.

4. MAJOR POLICY AND LEGISLATION

Environmentally unsound practices in solid waste and sewage disposal pose the most serious threat from tourism to the delicately balanced coral reef ecosystem of the Maldives. Although solid waste is a cause of environmental concern, at current levels it is more of an aesthetic problem. In the past, waste and garbage that could not be burned was dumped into the sea. The law now prohibits this practice, and waste incinerators and crushers have to be used in all resorts. Sewage effluent is discharged into the sea by the resorts. However, the discharges from resorts are very small and the evidence of reef degradation from sewage discharges is inconclusive. Some of the resorts are now turning to the latest technology in sewage treatment using ultra violet radiation to produce virtually pure water.

The Maldives has developed a very suitable form of tourism, appropriate for the small island environment. The present form of tourism development has not generated any serious environmental impacts. This has been accomplished through appropriate policies, legislation, plans and instituted mechanisms to apply strict standards and regulations.

However, the increasing number and magnitude of coastal modifications on the islands, which include reclamation, harbour dredging and beach replenishment are serious environmental issues that need to be addressed in the tourism sector. The management of solid wastes is identified as a key environmental issue in the Second National Environment Action Plan. In 1998, a study on The Solid Waste Management for Malé City in the Republic of Maldives was carried out with the assistance of Japan International Co-operation Agency (JICA), to assess the solid waste disposal problems on inhabited islands and resorts.

The Ministry of Home Affairs, Housing and Environment is currently in the process of developing a national waste management strategy for the country. An interagency technical committee was formed in April 2000 to advice the Ministry on the national waste management strategy. Under the South Regional Development Project, and with the guidance of the technical committee, work is underway to develop a solid waste disposal site in Hithadhoo. A similar site is being developed under the Northern Regional Development Project in Kulhudhufushi. These waste disposal sites are expected to become operational in 2002. Barging of solid waste collected at the transfer station from Malé to Thilafushi has proved practical and efficient. It is planned to utilise the experience gained from this operation on all the inhabited islands of Malé Atoll in 2002. Plans are underway to barge the solid waste collected from the inhabited islands in Malé atoll to the Thilafushi landfill. When this project is implemented, the problem of solid waste disposal in Malé Atoll would be significantly improved.

Maldives is party to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. The Environment Protection and Preservation Act of the Maldives (Law 4/93) provides a statutory framework enabling the control and regulation of the transboundary movement of hazardous waste controlled under the Basel Convention.

CHAPTER X

SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: BIODIVERSITY

Key Issues: Protection and Conservation of Biodiversity; Protection of endangered Species; Environment Education; Capacity Building; Enforcement and Compliance; Ecosystem Development; Peoples Participation

Policy Framework: National Environment Action Plan

Key Legislation: Environment Protection and Conservation Act, 1997; National Biodiversity Conservation Strategy in 1997; Law on Uninhabited Islands (Law no: 20/98

Key Institutions: Ministry of Home Affairs, Housing and Environment

1. INTRODUCTION

Due to the lack of natural resources and wealth, biodiversity – particularly marine biodiversity – is the most significant and vital resource base for the country. The livelihood has traditionally been marine-based as well and marine resources still continue to be the main generator of food, earnings, employment, protection and shelter.

Coral mining, in addition to having adverse impacts on the reefs itself, affects the islands as well as biodiversity. Coral reefs offer strong coastal protection against ocean currents, waves and tides. Mining of coral has resulted in the destruction of this protection layer in some islands causing a considerable amount of beach sand to wash away from the island into the sea. As the protection layer is destroyed, waves and tides wash directly onto the island causing damage to the vegetation and intruding into the freshwater aquifer. Other associated impacts on the reefs include loss or migration of residential reef fish communities and other living organisms, loss of baitfish that are important for the local tuna fishery, and reduced coral percentage cover. Most importantly, these reefs may take several years to recover. Cement blocks are increasingly replacing the use of coral for housing. In addition, alternatives such as cement and sand bags are being utilised for construction of seawalls and harbour walls. However, the practice of using coral for buildings and for sea walls is not widespread.

2. BIODIVERSITY CONSERVATION

As population has grown in crowded islands and when available land area was no longer sufficient to meet the demand for housing, reclamation of shallow reefs adjacent to the islands has been carried out. Land reclamation activities have negative implications such as destruction of shallow lagoons, sea grass and reef flat communities, and adverse effects on nearby coral reef communities through suspended sediments. Therefore, housing issues and expansion in the face of a growing population continues to deplete the natural resources such as stocks of ground water, plants and coral reefs of the fragile ecosystem. Additionally, it has increased the variety and magnitude of pollution created by human settlements.

3. FISH RESOURCES

Although tuna has historically been the major fish resource and little use was made of reef fish resources, over the last decade or so, exploitation of reef resources in the Maldives has become an important component of the country's fisheries sector. Demand for marine products such as lobsters and reef fish increased locally with increase in demand for the tourist resorts. High demand in the international market for certain reef species has increased pressure on these reef resources. Reef resources that are exploited mainly for export include groupers, sea cucumber, sharks and ornamental varieties.

A specific fishery for grouper started in the Maldives in 1992. The maximum sustainable yield for all grouper species is estimated at 1800+700 tons. However, these are crude estimates to be used cautiously. Export figures show a declining trend in the quantity of groupers exported as well as total value of exports. Given the pressure on grouper resources, it is highly likely that they are being over fished.

Export figures for dried sea cucumber show a much lower bulk of exports in the mid and late 1990's compared to the peak years during early 1990's, with correspondingly low value for exports. However, the total value increased considerably in 2000. The live ornamental species export trade (Aquarium Fish) exploits about 100 species of marine organisms, the majority of which are reef fish. Of these, about 20 species contribute to more than 75% of the catch. The total quantities of ornamental species exported by the "Ornamental Fish" industry have declined in recent years. Some species were being locally over- exploited or exploited close to maximum sustainable levels in the area around Malé.

Some species exploited by the aquarium fish trade are known to be limited in distribution or rare or not yet described for the Maldives. The Clown Fish (*Amphiprion nigripes*) is quasi-endemic, with the Maldives as its centre of abundance. The species is quite commonly exported from the Maldives and 8000 Maldives Clown Fish and 500 anemones were exported in 1994 alone. The angelfish (*Apolomichthys armitagei*) is known to be rare in the Maldives. Reef sharks as well as oceanic sharks are exploited

mainly for the fins. Dried shark fins fetch good prices in the international market. It is suggested that reef sharks were being fished at moderate levels of fishing effort, which was probably sustainable at the time of study. However, an increase in fishing effort from that of 1993 levels would adversely affect stocks. The current status of reef shark stocks is unknown. Threat of over-exploitation is the biggest environmental problem posed by commercial exploitation of reef resources. The export quantities of most of the reef species have declined. Since stock status is not monitored regularly it is not known if stocks are over-exploited.

The first National Biodiversity Strategy and Action Plan (NBSAP) of the country was adopted in 2001. It was undertaken with extensive stakeholder participation throughout the country, and the draft NBSAP was discussed and endorsed at a national level workshop in April 2001. The first country report on biological diversity will also be published in 2001. Recognising the importance of healthy coral reefs to the two major industries of the Maldives, tourism and fisheries and the need to address the problems resulting from increased reef resource usage, the Maldivian Government began promoting a policy of integrated reef resource management. The Ministry of Fisheries, Agriculture and Marine Resources with assistance from the Bay of Bengal Programme (BOBP) initiated the Integrated Reef Resources Management (IRRM) programme. Under this programme, a workshop was held in Malé in March 1996 with extensive stakeholder participation and national and international advisors, to _identify key issues and objectives for the IRRM process, and make recommendations for its implementations.' The Fisheries Advisory Board endorsed the recommendations made at this workshop in 1996.

The Government has also initiated several measures for the protection of important habitats and threatened species. Since 1 October 1995, 25 marine areas have been declared protected. All forms of fishing except bait fishing with traditional methods have been banned in these areas. These are popular dive sites and 14 are popular for shark-watch diving. Turtles have also been protected since 24th June 1995. Other measures include banning export of important baitfish as aquarium fish; banning fishing from the house reefs of tourist resorts; and the protection of threatened marine resources such as sharks, sea turtles, giant clams, and black coral. There are 25 marine protected areas, under the Law on Protection and Preservation of the Environment.

All fishing or collection of these animals in the Maldives is prohibited. Protected species include the bird White Tern Gygis alba monte in 1996, and 22 additional bird species protected in 1999 under the Environmental Protection and Preservation Act, of which some are important to the local tuna fishery and others are endemic to the Maldives at a subspecies level. Taking into consideration the importance of sharks to the fisheries and tourism sectors, on 8 September 1998, the Government banned all forms of shark fisheries for a period of 10 years, within the 12-mile zone from the atoll rim.

Two islands, Hithaadhoo (North Huvadu Atoll) and Hurasdhoo (South Ari Atoll), have been declared as protected islands because of their unique avian population and geological formations, respectively. A tree-planting programme was launched nationwide

during 1996 with the aim of adding a million trees to the island ecosystems within 3 years. The President initiated the –Million Tree Programme" on 15 January 1996. The tree-planting programme was a concerted effort to conserve, rehabilitate and manage the environment. The Ministry of Fisheries and Agriculture was selected as the nodal agency for the implementation of the program under he guidance of the President's Office.

4. LEGISLATION

The Maldives Protected Area Systems (MPAS) project aims to assist the Government with establishment of a replicable and sustainable system for protected area management. Legal measures for protection of timber resources were established through regulations under the Law on Uninhabited Islands (Law no: 20/98). Under this law, timber from uninhabited islands can be logged only after the receipt of written approval for the purpose from the Ministry of Fisheries and Agriculture, and in the presence of a representative of both the atoll office and the lessee. In addition, every coconut palm that is logged has to be replaced with 2 coconut palms and every tree that is logged has to be replaced by a tree under the direction of the Ministry of Fisheries and Agriculture.

The Marine Research Centre of the Ministry of Fisheries, Agriculture and Marine Resources has undertaken three different coral reef monitoring programmes in collaboration with different institutions or agencies. Coral reef monitoring to assess the extent of coral bleaching has been carried out in collaboration with the Global Coral Reef Monitoring Network (GCRMN) since 1997 and Coral Reef Degradation in Indian Ocean (CORDIO) project, particularly initiated with the support from Swedish Government, to study the bleaching effects since 1998.

The overall objective of the Maldives/GCRMN project is to improve management and sustainable use of coral reefs and related ecosystems by providing information on the trends in biophysical status, social cultural and economic values of these ecosystems. The Marine Research Centre (MRC) has also participated in the ReefCheck programme since 1997: a volunteer effort carried out worldwide by recreational divers and led by experienced marine scientists. In addition, MRC has an ongoing program on identification and cataloguing of fish species in Maldivian waters.

5. CONVENTION ON BIOLOGICAL DIVERSITY

The Maldives was among the first countries to ratify the Convention on Biological Diversity. The Maldives signed the Biodiversity Convention on 12 June 1992 and ratified the convention in October 1992. Under GEF assistance the Maldives will be formulating its National Biodiversity Conservation Strategy in 1997.

Coral reefs of the Maldives are renowned for their aesthetic beauty and species diversity and the reefs support stocks of endangered species such as green and hawksbill turtles, giant clams and black coral. Recognizing the importance of protecting marine ecosystems in the Maldives and obligations under article 8 of the Convention of Biological Diversity,

15 sites have been designated by the Government as protected areas. Two islands, Hithaadhoo and Hurashdoo have been declared as protected areas because of their uniqueness. A project has been formulated to enhance the capacity to manage protected areas in the Maldives and funding has been committed by AUSAID.

An integrated reef resources management programme has been formulated by the Ministry of Fisheries and Agriculture. This programme is designed to assist in the sustainable exploitation of reef resources in the Maldives. Under this programme an agenda for sustainable reef resource development has been drawn in March 1996 through consultation with and participation of various resource users, community groups and government departments.

A million tree programme has been initiated in the Maldives from January 1996. Under this three-year nation-wide programme it was planned to plant one million additional trees in the Maldives. Currently the plan is to plant two million trees in the given time frame. Under this programme special emphasis will be given to restoration of threatened habitats and re-introduction of certain locally threatened species.

CHAPTER XI

STATUTORY TOOLS

Key Issues: Implementation; Public Participation; Education and Awareness; Enforcement and Compliance; Monitoring, Evaluation and Assessment of Tools

Key Legislation: Environmental Impact Assessment (EIA), 1994; Environmental Protection and Preservation Act, 1993

Key Institutions: Ministry of Home Affairs, Housing and Environment; Ministry of Planning and Environment; National Environment

1. ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

Environmental Impact Assessment (EIA) has been made mandatory for large scale projects in the Maldives through the Environmental Protection and Preservation Act (4/93). The legislation provides the basic framework for the EIA process, which is laid out in the form of guidelines. According to article 5 (a) of the Act, an impact assessment study shall be submitted to the Ministry of Planning, Human Resources and Environment before implementing any activity that may have an impact on the environment. Article 5 (b) states that the principles of EIA and the projects that require an EIA shall be determined by the Ministry of Planning, Human Resources and Environment. To streamline and facilitate the EIA process in the country, the Ministry has developed a set of guidelines outlining the procedures and these were approved by the Cabinet in December 1994.

2. SUCCESS STORIES

The participants discussed various successful programme and projects that have implemented in the Maldives and decided to include tourism development and tuna fishery as success stories. The Maldives has developed a very suitable form of tourism, appropriate for the small island environment. The present form of tourism development has not generated any serious environmental impacts, and this has been accomplished through careful management.

In order to regulate the carrying capacity and to retain the natural beauty and environment of the islands that have been developed as tourist resorts, special guidelines and regulations have been issued by the Ministry of Tourism. These include:

- In tourist resorts, only a maximum of 20% of land can be utilised for buildings;

- When clearing land for construction, enough vegetation should be left untouched in order to block the view of buildings;
- No building should rise above the top vegetation line;
- To handle waste generated on resort islands, incinerators and compactors should be present;
- Adequate desalination plants should be utilised to prevent groundwater depletion and during pier and wharf construction physical interference with island coastlines and current patterns should be minimal.

The success of tourism development in the Maldives is based on the co-operation extended to the government by the Maldives Association of Tourism Industry in early identification of critical issues and in instituting a responsive policy framework to meet the challenges facing the industry.

To ensure that fisheries development is sustainable, the Ministry of Fisheries has set quantity limits and controls on the types of fishery that can be carried out. In the Maldives, drift net fishing is not permitted and in tuna fishery the ―pole in line" method is used. The fisheries law strictly prohibits commercial exploitation of several marine species including black coral, giant clams, whale sharks, turtle and dolphins. Detailed information is available on tourism development and tuna fishery in the Maldives.

The Maldives also has the rich experience of a very successful community decision making process that has been in operation for over 16 years. Each inhabited island has a development committee that advises the government on land use planning on the respective island and makes important decisions in the area of island development. The members of the island development committee are elected by the people of the island. These non-political planning entities have demonstrated that community decision making is practical and very effective. The participants noted that human resource development is essential so that informed decisions can be made by these bodies.

CHAPTER XII

MULTILATERAL ENVIRONMENT AGREEMENTS AND THEIR IMPLEMENTATION

Key Issues: Implementation; Technology Transfer; Inbuilt Funding Mechanism; Synergy with other agreements; Informed Negotiations, Education and Awareness

Key Legislation: National Environment Action Plan; Environmental Protection and Preservation Act, 1993; Environmental Impact Assessment (EIA); Fisheries Law of the Republic of Maldives, 87

Key Institutions: Ministry of Home Affairs, Housing and Environment; Ministry of Planning and Environment; National Environment Council; National Commission for the Protection of the Environment; Ministry of Fisheries & Agriculture; Ministry of Tourism; Ministry of Health and the Ministry of Construction & Public Works; Ministry of Tourism

1. INTRODUCTION

The Maldives is Party to the UNFCCC, Convention on Bio-diversity, United Nations Convention on the Law of the Sea, Vienna Convention for the Protection of the Ozone Layer, Montreal Protocol on Substances that Deplete the Ozone Layer, and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

Apart from the Convention of the Law of the Sea, the Ministry of Home Affairs, Housing & Environment has the obligation to administer all other Conventions. There are two projects currently being implemented by the Environment Section one for the implementation of the UNFCCC, & other for the Convention on Bio-diversity.

2. CONSERVATION OF BIODIVERSITY

The Maldives was among the first countries to ratify the Convention on Biological Diversity. The Maldives signed the Biodiversity Convention on 12 June 1992 and ratified the convention on October 1992. Under GEF assistance the Maldives will be formulating its National Biodiversity Conservation Strategy in 1997.

3. CLIMATE CHANGE

The Maldives ratified the UN Framework Convention on Climate Change (FCCC) in October 1992. The participants noted with serious concern the slow progress of the global implementation of the United Nations FCCC. Particularly on key issues such as the adoption of a protocol or another legal instrument on arresting greenhouse gases and technology transfer, as well as the provision of new and additional funding for developing countries. The Maldives along with other members of the Alliance of Small Island States (AOSIS) has played a very important role in the difficult negotiations towards the adoption of a protocol on reducing greenhouse gas emissions.

APPENDIX A

LIST OF ABBREVIATIONS

ACRONYM	MEANING
ADB	*Asian Development Bank*
ADC	*Atoll Development Committee*
AOSIS	*Alliance of Small Island States*
AUSAID	*Australian Agency for International Development*
BOBP	*Bay of Bengal Program(me)*
CBD	*Convention on Biological Diversity*
CBOs	*Community-Based Organisations*
CORDIO	*Coral Reef Degradation in Indian Ocean project*
EEZ	*Exclusive Economic Zone*
EIA	*Environmental Impact Assessment*
EPA	*Environmental Protection Act*
ESCAP	*Economic and Social Commission for Asia and the Pacific*
GCRMN	*Global Coral Reef Monitoring Network*
GEF	*Global Environment Fund*
HDPE	*High Density Polyethylene*
ICJ	*International Court of Justice*
ICTPs	*International Conventions/Treaties/Protocols*
IDC	*Island Development Committee*
INDOEX	*Indian Ocean Experiment*
IRRM	*Integrated Reef Resources Management*
IWC	*Island Women's Committee*
JICA	*Japan International Co-operation Agency*
MEA	*Multilateral Environment Agreements*
MPAS	*Maldives Protected Area Systems*
MRC	*Marine Research Centre*
MWSA	*Maldives Water and Sanitation Authority*

MWSC	*Malé Water and Sewerage Company Ltd.*
NBSAP	*National Biodiversity Strategy and Action Plan*
NCPE	*National Commission for the Protection of the Environment*
NORAD	*Norwegian Agency for Development Cooperation*
PIL	*Public Interest Litigation*
ppm	*Parts Per Million*
ROAP	*Regional Office for Asia and the Pacific*
SAARC	*South Asian Association for Regional Cooperation*
SACEP	*South Asia Cooperative Environment Program(me)*
UN FCCC	*United Nations Framework Convention on Climate Change*
UNCCD	*United Nations Convention to Combat Desertification*
UNDP	*United Nations Development Program(me)*
UNEP	*United Nations Environment Program(me)*
VOCs	*Volatile Organic Compounds*