ENVIRONMENTAL LEGISLATION AND INSTITUTIONS IN SRI LANKA

HANDBOOK ON NATIONAL ENVIRONMENTAL LEGISLATION AND INSTITUTIONS IN SOUTH ASIA

SOUTH ASIA COOPERATION FOR ENVIRONMENT PROGRAMME (SACEP)
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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

Sri Lanka is among the most biologically diverse countries in the world. However, high rates of population growth and urbanization, violent ethnic clashes and widespread incidence of poverty pose challenges for effective environmental management. Although improvements have been witnessed in all major indicators of human development in recent years, Sri Lanka still faces a multitude of environmental problems. Most evident are those of air pollution, vehicular pollution, deforestation, solid waste disposal problems, soil erosion, land degradation, loss of biodiversity and wildlife, industrial pollution, coastal erosion and problems associated with tourism.

Recognising its environmental problems Sri Lanka has taken steps to manage them. Starting in the 1980s several laws have been passed designed to integrate environmental issues with the economic development program. The most successful measures taken have strengthened the synergy and coordination between various institutions for promoting a coherent and holistic approach to the management of the environment. The legal system, particularly the judiciary, has been a crucial partner in this process.

2. THE CONSTITUTION

Sri Lankan Environmental Management Policy originates from the Constitution. In the wake of the Stockholm Conference in 1972, Sri Lanka strengthened its Constitution by enshrining provisions that protect the environment. There are two major provisions in the Sri Lankan Constitution relating to the environment: Article 27 which makes it the duty of the State to "protect, preserve and improve the environment for the benefit of the community"; and Article 28 which enshrines the "fundamental duty" of every person to "protect nature and conserve its riches." Significant to several areas discussed in the Handbook, the Constitution also enshrines the general right to information.

Another noteworthy constitutional protection was introduced via the Thirteenth Amendment. It involved the devolution of power and administrative responsibility in a number of areas to the Provincial Councils. This had the profound effect of enabling the North Western Provincial Council to become the first such Council to pass its own environmental statute and create its own Environmental Authority.

Article 140 also provides protection to the environment by providing for various writs from the Court of Appeal against administrative acts or omissions.

3. THE JUDICIARY

Recent years have witnessed a transformation from the traditional role of the judiciary to a liberal, and at times activist judicial stance on the environment. The courts have interpreted many constitutional articles dealing with rights liberally, have become more willing to make orders against the State, have lowered the threshold of locus standi, relaxed the rules of pleading and burden of proof and fostered the rise of 'public interest litigation' thereby providing more equitable access to many people.

This liberal modernization relating to environmental issues has been based on "the constitutional promise of a social and economic transformation to usher in an egalitarian social order and a welfare state." There has developed a clear intention to vindicate and effectuate public interest by protecting the rights of sizeable segments of society which, owing to poverty, ignorance and social and economic disadvantages, cannot assert themselves and are quite often unaware of their rights.

4. LEGISLATION AND INSTITUTIONS

The majority of the text in the following booklet is dedicated to discussing Sri Lanka's many environmental laws and regulations as well as the institutions, bodies, plans, schemes and policies established to combat the multiple problems Sri Lanka faces.

These topics are addressed in two broad areas. The earlier chapters of the booklet provide an overview of the relevant legislation and institutions and a more general look at the national governance of Sri Lanka. The bulk of the booklet then goes on to look at the legislative and institutional responses to Sri Lanka's environmental problems, divided into seven sectoral areas.

The general overview of Sri Lanka's legislation asserts that a comprehensive legal and institutional infrastructure has been developed, including laws for controlling land air and water pollution. However it also acknowledges the widening gap between Sri Lanka's environmental goals and its achievements. This is put down to inadequate management skills, ill-defined project planning, poor law enforcement, confusing procedures, inadequate training and poor facilities. Accordingly legislative focus has now moved to a wide–ranging, comprehensive framework of environmental management for sustainable development. Modern statutes seek to move away from simple regulation to an effective management framework, which enables government officials to interact with community resource users and the private sector.

A major piece of legislation is the National Environment Act 1980 which established both a Central Environment Authority and Environmental Council. This is an example of an "umbrella" law, that is one that covers an entire spectrum of cross-sectoral issues, stating policies and principles but not codifying them. The abundant use of regulations, evident throughout the booklet, is utilized to update and dictate specific laws as issues arise.

The earlier chapters of the booklet also define the key institutions and their role in environmental matters. Such institutions include the Ministry of Environment and Forestry, the Ministry of Transportation, Environment and Women's Affairs, the Ministry of Agriculture and Lands, the National Development Council, the Central Environment Agency and the Local and Provincial Governments. The lack of specificity in the powers, functions and duties of these national environmental institutions and, in some instances, overlapping jurisdictions, has been a major source of conflict between them, resulting in the constant institutional conflicts and the consequent weakening of the overall environmental management system. This is further complicated by clashing jurisdictions between the central and provincial agencies.

An encouraging trend in recent years has been the strengthening of such institutions to promote better vertical and horizontal coordination between different agencies. The devolution of power to community levels and the facilitation of public participation has also been seen as progressive development.

More specific analysis and discussion relating to Sri Lanka's legislation and institutions is undertaken in Chapters VI to XII. The seven sectoral areas discussed are: Water; Atmosphere; Chemicals and Wastes; Forestry; Biodiversity; Wildlife; and Eco-tourism. Each chapter generally follows a pattern of defining the environmental problems in the particular area, then detailing the legislative and institutional responses to these problems. In several chapters official studies are cited and case studies are often used illustratively for example, the Kandalama Hotel case used in the discussion on eco-tourism.

The chapter on water follows this pattern. The chapter begins by describing the rainfall patterns and availability of water in Sri Lanka, before identifying the pressures placed on water resources in two simple categories and the subsequent associated problems. Problems of pollution of inland waters, ground water pollution and pollution due to urbanisation and industrialisation are detailed and the case study of the Kotmale reservoir is introduced. The later part of the chapter then turns to the 'legal and institutional measures' that respond to the aforementioned problems.

5. STATUTORY TOOLS

Sri Lankan statutes have the feature of creating various enabling tools that empower the institutions of the country to give effect to the laws and policies they establish. Six statutory tools are specifically discussed in the relevant chapter. The first of these is perhaps the most widely used and well established tool available to regulate industries that affect the environment, that is the tool of licensing and permitting. Established under the National Environment Act, the principle economic instrument used in Sri Lanka is the Environment Protection Licensing Scheme.

Another major tool that is discussed in the booklet is the Environmental Impact Statement. Operating island-wide and being mandatory for certain projects, under the

National Environment Act, an EIA is defined as "a written analysis of the predicted environmental consequences of a proposed project." The discussion covers in detail issues such as the role of the NEA, the content of an EIA, the EIA process and macro level EIAs. It should be noted however that the EIA process has been criticised as being poorly implemented.

Considered essential to the EIA process, public participation and the right to information are also assured via statutory tools. These include a special handbook published in 1997 by the CEA and special provisions under the Constitution and the National Environment Act that guarantee the public right to information about environmental projects and developments.

Other statutory tools described include the Strategic Environmental Assessment process and the implementation of standards across industries such as those published in the Gazette notification of 2nd February 1990 regarding the discharge of industrial effluents.

6. MULTILATERAL AGREEMENTS

Sri Lanka has recently become a signatory to a myriad of multilateral international agreements relating to the environment, some thirty-one are cited in the relevant chapter. The discussion is centered on detailing four major multilateral agreements: The Convention on International Trade in Endangered Species of Fauna and Flora; Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal; Montreal Protocol on Substances that Deplete the Ozone Layer; and the Framework Convention on Climate Change. The Uruguay Round Multilateral Trade Agreement of the World Trade Organisation is also discussed.

For each agreement Sri Lanka's domestic responses and actions are described. The discussion covers issues such as domestic legislation, regulations, standards and guidelines; action plans and schemes; institutional developments and decision making structures; capacity building/ technology issues; and Sri Lanka's various obligations and inherent constraints. In illustration of the strength of Sri Lanka's institutional infrastructure for implementing the agreements, some national bodies are noted, including the Inter-ministerial Coordinating Committee on Climate Change and the Montreal Protocol Unit.

Although the implementation of these agreements into domestic legislation has not been encouraging, this trend is changing. To ensure the effective implementation of these agreements, the Ministry of Environment must ensure that they meet Sri Lanka's interests. Thus, measures prior to the negotiation and adoption of such measures should include consultation with relevant ministries, departments, agencies, the public and private sectors and NGOs.

CHAPTER II

LIST OF ENVIRONMENTAL ISSUES, POLICIES, LEGISLATION, INSTITUTIONS AND INTERNATIONAL CONVENTIONS IN SRI LANKA

MAP OF SRI LANKA

Key Environmental Issues

Air Pollution; Vehicular Pollution; Deforestation; Solid Waste Disposal Health Hazards; Water Pollution; Soil Erosion; Land Degradation; Loss of Biodiversity and Wildlife; Industrial Pollution; Coastal Erosion; Inadequate Capacity to manage Environment;

Marine Biodiversity; Degradation of Marine Resources; Environment Education; Environment Capacity Building.

Environmental Policies

National Conservation Strategy 1988; National Environmental Action Plan 1994 updated in 1998.

Legislation Related to Environment

National Environmental (Noise Control) Amendment Regulation 1997; Fisheries and Aquatic Resources Act, 1996; National Environmental (Noise Control) Regulation 1996; Regulations contained in Gazette Extraordinary No. 924/13 of 23-05-1996; Motor Traffic Act, Standards published in Gazette Extraordinary No. 817/6 of 1994; Coast Conservation Act No. 57/198; Forestry Ordinance, the Flora & Fauna Act, the Fisheries Act; National Environmental (Protection and quality) Regulation 1990; Coast Conservation (Amendment) Act 1988; National Environment (Amendment) Act 1988; National Heritage Wildness Act 1987; Sri Lanka Standards SLS 722. 1985; Sri Lanka Standards SLS 721. 1985; Water Quality Standard; Sri Lanka Standards SLS 652 1984; Sri Lanka Standards SLS 624. 1983/1984; Land Reclamation and Development Corporation Act No. 52 1982; Marine Pollution Prevention Act 1981; Coast Conservation Act 1981; National Aquatic Resources & Development Agency Act 1981; Coast Conversation Act 1981; Marine Pollution Prevention Act 1981; Research and Development Agency Act No. 54 1981; National Environment Act 1980; Control of Pesticide Act 1980; National Environmental Act 1980 and Amendment 1988; National Environmental Act established in 1980 and amended in 1988; Sri Lanka Ports Authority Act 1977; National Water Supply and Drainage Board Law 1974; National Water Supply and Drainage Board Law No. 12 1974; Mines and Minerals Law No. 4 1973; Forest ordinance of 1970 and its Amendments up to 1979; Section 20A of the Greater Colombo Economic Commission Law No. 4 of 1978 as amended by Act No. 49 of 1992; Water Resources Board Act 1964; Drought Control Act No. 25 1951; State Land ordinances No.8 1947 and No. 9 1948; Ordinance to provide for the protection of Fauna and Flora of Sri Lanka 1937 (Chap.567) and its Amendments of 1942, 1944, 1945, 1949, 1964 and 1970; Ordinance for the Protection of Areas Subject to Damages from Floods No. 4 of 1924 and Act No.22 of 1955; Land Development Ordinance No. 19 1935; Geological Survey and Mines Bureau Forest Ordinance No. 16 1907.

Environmental Institutions

Ministry of Environment and Natural Resources; Department of Wildlife Conservation; Coastal Conservation Department; National Environmental Steering Committee, Metrological Department; Ministry of Agriculture, Lands and Forestry; Natural Resources, Energy and Science Authority; Ministry of Fisheries and Aquatic Resources; Ministry of Transportation, Environment, and Women's Affairs; Wayamba Environmental Authority; Ministry of Finance, Planning, Ethnic Affairs, and National Integration; Central Environmental Authority; Ministry of Finance, Planning, Ethnic Affairs, and National Integration; National Planning Department; Board of Infrastructure Investment; Regional Industry Service Committees; Industrial Development Board; Provincial and Local Governments; Sri Lanka Standards Institute; Central Environmental Authority; Ministry of Environment and Natural Resources; National Water Supply and Drainage Board (NWSDB); Ministry of Housing and Plantation Infrastructure; Department of Coast Conservation(CCD), Ministry of Fisheries and Ocean Resources; Irrigation Department; Ministry of Irrigation and Water Management; Mahaweli Authority of Sri Lanka; Ministry of Irrigation and Water Management; Water Resources Board; Ministry of Irrigation and Water Management; Department of Forests; Ministry of Environment and Natural Resources; Department of Wildlife Conservation; Ministry of Environment and Natural Resources; Geological Survey and Mines Bureau; Marine Pollution Prevention Authority; Fisheries and Ocean Resources; Natural Resources, Energy & Science Authority (NARESA); Ministry of Economic Reform Science and Technology; Provincial Council Under Ministry of Home Affairs (Municipal Councils, Urban Councils & Pradeshiya Sabhas); Sri Lanka Reclamation & Development Corporation of the Ministry of Housing and Plantation Infrastructure.

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

- Vienna Convention on Substances that Deplete the Ozone Layer 1985; and the subsequent
- Montreal Protocol on Substances that Deplete the Ozone Layer 1987 (ratified on 15 December 1989);
- Bonn Convention on Migratory Species 1989;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973 (CITES);
- London Amendment 1990 (ratified on 16 June 1993);
- Copenhagen Amendment 1992 (ratified in July 1997);
- Ramsar Convention on Wetland of International Importance Especially as Waterfowl Habitat 1971;
- Convention Concerning the Protection of the World Cultural and Natural Heritage 1972;
- Convention on the Conservation of Migratory Species of Wild Animals 1979 (CMS);
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1989;
- Convention on Biological Diversity 1992;
- United Nations Framework Convention on Climate Change 1992 (ratified on 23 November 1993);
- United Nations Convention to Combat Desertification 1994;
- United Nations Convention on the Law of the Sea 1982;
- Convention on early notification of a nuclear accident;
- Agreement on the Network of Aquaculture Centers in Asia and the Pacific;
- Convention on the Prohibition of the Development, Production, Stockpiling and use of Chemical Weapons and on their Destruction;
- Agreement for the establishment of the Indian Ocean Tuna Commission 1993;
- International Plant Protection Convention;

- International Convention for the Preservation of Pollution of the Sea by Oil (as amended);
- Marine Pollution Prevention Authority Plant Protection Agreement for Asia and Pacific Region (as amended);
- Convention on the Continental Shelf;
- Convention on Fishing and Conservation of the Living Resources of the High Seas;
- Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water;
- Treaty on principles governing the activities of states in the exploration and use if
- Outer space including the moon and other celestial bodies;
- International Convention on Civil Liability for Oil pollution Damage (as amended);
- International Convention Relating to intervention on the high seas in cases of oil pollution casualties;
- Convention on the prohibition of the development, production and stockpiling of bacteriological (biological) and toxin weapons and on their destruction;
- Convention on the prohibition of military or any other hostile use of environmental Codification techniques;
- The International Convention for the Prevention of Pollution from the ships
- (MARPOL) 1973;
- Bio-safety Protocol 2000;

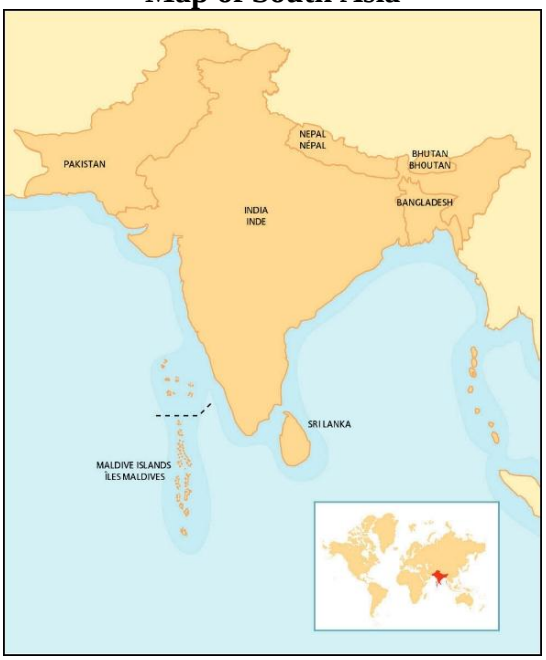
CHAPTER III

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.

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.

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.

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.

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.

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

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Overview

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.

STATUS OF MAJOR GLOBAL ENVIRONMENT CONVENTIONS IN SACEP 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

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.

CHAPTER IV

COUNTRY PROFILE

1. GEOGRAPHICAL

Location: Southern Asia, island in the Indian Ocean, south of India.
Geographic coordinates: 7 00 N, 81 00 E
Map references: Asia
Area: *Total:* 65,610 sq km
Land: 64,740 sq km
Water: 870 sq km
Area comparatively: Slightly larger than West Virginia.
Land boundaries: 0 km
Coastline: 1,340 km
Maritime claims:
C*ontiguous zone:* 24 nm
C*ontinental shelf:* 200 nm or to the edge of the continental margin.
E*xclusive economic zone:* 200 nm
T*erritorial sea:* 12 nm

Climate: Tropical monsoon; northeast monsoon (December to March); southwest monsoon (June to October).

Terrain: Mostly low, flat to rolling plain; mountains in south-central interior.

Elevation extremes:
Lowest point: Indian Ocean 0 m
H*ighest point:* Pidurutalagala 2 524 m

Natural resources: Limestone, graphite, mineral sands, gems, phosphates, clay.

Land use:

A*rable land:*	14%
P*ermanent crops:*	15%
P*ermanent pastures:*	7%
F*orests and woodland:*	32%
O*ther:*	32% (1993 est.)

Irrigated land: 5 500 sq km (1993 est.)

Natural hazards: Occasional cyclones and tornadoes

Geography: Strategic location near major Indian Ocean sea lanes

Population: 18,933,558 (July 1998 est.) *note:* since the outbreak of hostilities between the government and armed Tamil separatists in the mid-1980s, several hundred thousand Tamil civilians have fled the island; as of late 1996, 63 068 were housed in refugee camps in south India, another 30 000-40 000 lived outside the Indian camps, and more than 200 000 Tamils have sought political asylum in the West.

Legal system: A highly complex mixture of English common law, Roman-Dutch, Muslim, Sinhalese, and customary law; has not accepted compulsory ICJ jurisdiction.

Legislative branch: Unicameral Parliament (225 seats; members elected by popular vote on the basis of a modified proportional representation system to serve six-year terms).

Judicial branch: Supreme Court, judges are appointed by the Judicial Service Commission; Court of Appeals.

2. ECONOMY—OVERVIEW

At the time of independence in 1948, plantations growing tea, rubber or coconuts and paddies growing rice for subsistence dominated Sri Lanka's economy, and as late as 1970 plantation crops accounted for 93% of exports. In 1977 Colombo abandoned static economic policies and its import substitution trade policy for market-oriented policies and export-oriented trade. Sri Lanka's most dynamic industries are now food processing, textiles and apparel, food and beverages, telecommunications, insurance and banking. By 1996 plantation crops made up only 20% of exports, while textiles and garments accounted for 63%. GDP grew at an annual average rate of 5.5% throughout the 1990s until a drought and a deteriorating security situation lowered growth to 3.8% in 1996. The economy rebounded in second half 1996 and continued to perform well in 1997 with growth of 6%. Sustained economic growth, coupled with population growth of only 1.1%, has pushed Sri Lanka from the ranks of the poorest countries in the world up to the threshold of the middle-income countries. For the next round of reforms, the Central Bank of Sri Lanka recommends that Colombo expand market mechanisms in non-plantation agriculture, dismantle the government's monopoly on wheat imports and promote more competition in the financial sector. A continuing cloud over the economy is fighting between the Sinhalese and the minority Tamils, which has cost 50 000 lives in the past 14 years.

GDP: Purchasing power parity, $72.1 billion (1997 est.)
GDP—real growth rate: 6% (1997 est.)
GDP—per capita: Purchasing power parity—$3,800 (1997 est.)
GDP—composition by sector:
Agriculture: 18.4%
Industry: 18%

Services: 63.6% (1996)
Budget:
Revenues: $3 billion
E*xpenditures:* $4.2 billion, including capital expenditures of $1 billion (1997 est.)
Industries: Processing of rubber, tea, coconuts, and other agricultural commodities; clothing, cement, petroleum refining, textiles, tobacco.
Industrial production growth rate: 6.5% (1996 est.)
Electricity—capacity: 1.557 million kW (1997 est.)
Electricity—production: 4.86 billion kWh (1997 est.)
Electricity—consumption per capita: 220 kWh (1997 est.)
Agriculture—products: Rice, sugarcane, grains, pulses, oilseed, roots, spices, tea, rubber, coconuts; milk, eggs, hides, meat.

3. ENERGY

In 1998 Sri Lanka consumed 0.17 quadrillion Btu (quads) of commercial energy and produced 0.04 quads. Sri Lankan commercial energy consumption consisted of oil (76%) and hydroelectricity (24%). In addition, Sri Lanka consumes large amounts of noncommercial fuel, specifically biomass, nearly all of which is wood. Biomass consumption is increasing by about 3% annually. Overall biomass accounts for about 55% of Sri Lanka's total energy consumption. Biomass is consumed mainly by households and Sri Lanka has in the past, run successful wood stove programs.

Sri Lanka's government controls the price of petroleum and electricity. In addition, utilities are subsidised and power is sold at below-market rates. In 2000, Sri Lanka paid an additional $250 million in fuel import bills due to increased prices and also higher oil imports.

4. ENVIRONMENTAL OVERVIEW

Total Energy Consumption (1998E): 0.2 quadrillion Btu* (0.04% of world total energy consumption).
Energy-Related Carbon Emissions (1998E): 2.4 million metric tons of carbon (0.04% of world carbon emissions).
Sectoral Share of Energy Consumption (1997E): Residential (50.8%), Industrial (23.5%), Transportation (20.5%), Commercial (5.0%).
Sectoral Share of Carbon Emissions (1997E): Transportation (53.0%), Industrial (26.7%), Residential (16.3%), Commercial (3.9%).
Fuel Share of Energy Consumption (1998E): Oil (76.0%).
Fuel Share of Carbon Emissions (1998E): Oil (99.9%), Coal (0.1%).
Renewable Energy Consumption (1997E): 205 trillion Btu* (6% increase from 1996).
Status in Climate Change Negotiations: Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified November 23rd, 1993). Not a signatory to the Kyoto Protocol.

Major Environmental Issues: Deforestation, soil erosion, wildlife populations threatened by poaching; coastal degradation from mining activities and increased pollution; freshwater resources being polluted by industrial wastes and sewage runoff.
Major International Environmental Agreements: A party to Conventions on Biodiversity, Climate Change, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Nuclear Test Ban, Ozone Layer Protection, and Wetlands. Has signed, but not ratified: Marine Life Conservation.

5. LEGAL FRAMEWORK

National Environment Act 1980; National Environment (Amendment) Act 1988; Control of Pesticide Act 1980; Coast Conservation Act 1981; Coast Conservation (Amendment) Act 1988; Marine Pollution Prevention Act 1981; Fisheries and Aquatic Resources Act 1996; Forestry Ordinance; Flora & Fauna Act; Fisheries Act; National Environmental (Protection and Quality) Regulation 1990; National Environmental (Noise Control) Regulation 1996; National Environmental (Noise Control) Amendment Regulation 1997.

CHAPTER V

OVERVIEW OF CONSTITUTIONAL, LEGISLATIVE AND INSTITUTIONAL FRAMEWORK

A. THE CONSTITUTION OF SRI LANKA

Key Issues: No Specific Provisions for Right to clean Environment as Fundamental Right.

Key Provisions: Constitution of Government of Sri Lanka (Articles 27,28).

Key Institutions: Supreme Court of India; Provincial Courts; District Courts; Authorities; Tribunals.

1. INTRODUCTION

Sri Lanka's Environmental Management Policy originates from the Constitution, the country's supreme law. The 1978 Constitution recognizes that the state shall protect, preserve and improve the environment for the benefit of the community (Article 27) as principles of state policy. The Constitution also recognizes that it is the duty of every person in Sri Lanka "to protect nature and conserve its riches" (Article 28). The pledge given in the 1978 Constitution to safeguard the environment was formally institutionalized with the enactment of the National Environmental Act No.47 of 1980. This Act established the Central Environmental Authority (CEA) in 1981 as the premier state agency responsible for the "formulation and implementation of policies and strategies for the protection and management of environment in Sri Lanka".

This chapter also discusses relationship between constitutional powers of the Center and the Provinces. Particular discussion is directed to the Thirteenth Amendment and the devolution of power to Provinces.

2. CONSTITUTIONAL PROVISIONS

The Constitution of Sri Lanka contains several provisions relating to the environment. For example, Article 27(14) of the Constitution of Sri Lanka states that it is the duty of the State "to protect, preserve and improve the environment for the benefit of the community". In addition, Article 28(f) of the Constitution to makes it a "fundamental duty" of every person to "protect nature and conserve its riches". These provisions however, are not set out in the chapter on fundamental rights: they are to be found in the chapter entitled "Directive Principles of State Policy and Fundamental Duties" and are

not enforceable in a court of law as specifically stated by the Constitution. Chapter VI, Article 28 says that 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.

The Constitutional pledge for the management of the environment was further strengthened by the Thirteenth Amendment to the Constitution, which dealt with the devolution of power and administrative responsibility in a number of areas including environment. The Thirteenth Amendment states that the protection of environment within the province to the extent permitted by or under any law made by parliament is the responsibility of the Provincial Council (Ninth schedule, List 1 section 37). In addition to this, the Thirteenth Amendment to the Constitution lists the following areas related to environment as devolved subjects: environmental health; establishment and maintenance of herbaria; some functions of land use and land improvement; preservation, protection and improvement of stock and prevention of animal diseases; regulation of mines and mineral development; fees under the fauna and flora protection ordinance and land development ordinance.

However the subject of land, which is the important aspect of the environment, has been devolved to the provincial councils, subject to special provisions. Some of these provisions are:

a) National Land Commission appointed by the Central Government would be responsible for formulation of national policy with regard to the use of State land;
b) The Commission will include representatives of the provincial councils;
c) This Land Commission will have a technical secretariat representing all the relevant disciplines required to evaluate the physical and socio-economic factors relevant to natural resource management;
d) National Policy on land use is based on technical aspects (not on political or social aspects) and the commission will lay down general norms in regard to the use of land, having regard to soil, climate, rainfall, soil erosion, forest cover, environmental factors and economic viability; and
e) Provincial councils should exercise the power vested on them with regard to the land subject having due regard to the National Policy formulated by the National Land Commission.

Ambiguously, some important environmental subjects are listed under the concurrent list, hence both Provincial and Central Government had to agree on the implementation these powers which were held concurrently. Such subjects are soil erosion, social forestry, protection of wild animals and birds and protection of the environment.

By amendment, each Provincial Council had the authority to enact and implement any statute related to their responsibilities. On the basis of these provisions, the North Western Provincial (NWP) Council passed its own environmental statute and created its

own Environmental Authority, the Wayamba Environmental Authority (WEA). Other provincial councils have not so far enacted any such statute. After the Wayamba Environmental Authority was established, there were conflicts between central governmental and provincial authorities over the jurisdiction of certain activities. Undertaking the EIA process for Norochole thermal power plant is a good example. Finally both the central government and provincial authorities had to undertake separate EIAs.

The NWP environmental statute has also prescribed the projects and undertakings, which are required to obtain IEE and EIA. This prescribed list does not include large development projects such as power generations and major irrigation works. In the event of conflicts between a provincial statute and an Act of Parliament with respect to a subject in the concurrent list, the provincial statute takes precedence within the province. This has led to a situation where large-scale projects, which are not prescribed by the NWP environmental statute, would be exempted from the EIA requirement.

Further devolution of environmental management has been proposed. Under this proposal environment would appear in List I which specifies the preserved subjects and the List 2 which specifies the subjects devolved to the Regional Council. List I makes reference to "National Environment", List 2 refers to "Forestry and Protection of the Environment within a Region". This means that National Policy concerns come within the Central Government while the regional policies and implementation comes under the provinces.

Other environmental provisions proposed by the devolution proposal are:

(i) "Every citizen is entitled to own property alone or in association with others subject to the preservation and protection of the environment and the right of the community" (Article 21 (1).
(ii) "The State shall protect and preserve and improve the environment and safeguard the reefs, shores, forests, lakes, water courses and wildlife of Sri Lanka" (Principles of State Policies -Article 53 (6)); and
(iii) "Protect and improve the environment and conserve its riches" (Fundamental duties -Article 54 (6)).

The reserved list that contains subjects that shall be exercised by the Central Government includes following environment related functions:

(i) Protection of marine and aquatic resources in keeping with international obligations and measures to enforce such obligation;
(ii) Policy and national programs relating to coast conservation;
(iii) National Plans on environment and conservation including conservation of flora and fauna in keeping with international obligation; and
(iv) Intervention in instances of national (natural and environmental) disasters.

Other constitutional provisions available for environmental protection are provisions to obtain writ from the Court of Appeal against administrative acts or omissions (Article 140) e.g. the EFL Ltd has requested a writ of *certiorari* to cancel or quash the decision of

the Secretary to the Ministry of Forestry and Environment to approve the Upper Kotmale Hydro Power Project (CA No.1023/98). The EFL Ltd also has requested a writ of *mandamus* and a writ of *prohibition* from the Court of Appeal under Article 140 of the Constitution to direct authorities to take action to stop disastrous sand mining (CA No. 673/97). Under Article 126 of the Constitution, a citizen can seek redress from the Supreme Court for violating his right to life which includes a right to an environment suitable to live in and right to breathe air of acceptable quality that supports life (SCFR 569 /98).

3. CONCLUSION

The Constitutional Framework of Sri Lanka, like other South East Asian countries has been amended in the wake of Stockholm Conference in 1972. Sri Lanka has incorporated provisions relating to the environment in its Constitution. Constitutional amendments have sparked a growth in enactment of environmental legislation. Overall the amendments of the Sri Lankan Constitution represent an encouraging development in the region.

Of particular significance are the explicit roles of the individual and the State in protecting the environment. Also importantly the right to life in the Constitution has been extended to include a right to an environment suitable to live in and a right to breathe air of an acceptable quality.

B. LEGISLATION

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

Key Legislation: National Environment Act 1980; National Environment (Amendment) Act 1988; Control of Pesticide Act 1980; Coast Conservation Act 1981; Coast Conservation (Amendment) Act 1988;Marine Pollution Prevention Act 1981; Fisheries and aquatic resources Act 1996; Forestry Ordinance; the Flora & Fauna Act; the Fisheries Act; National Environmental (Protection and Quality) Regulation 1990; National Environmental (Noise Control) Regulation 1996; National Environmental (Noise Control) Amendment Regulation 1997.

Key Institutions: Ministry of Environment and Natural Resources; Department and Mahaweli Authority; Department of Wildlife Conservation; Coastal Conservation Department; National Environmental Steering Committee; Metrological Department; Ministry of Agriculture; Lands and Forestry; Natural Resources; Energy and Science Authority; Ministry of Fisheries and Aquatic Resources; Ministry of Transportation, Environment, and Women's Affairs; Wayamba Environmental Authority; Ministry of Finance, Planning, Ethnic Affairs, and National Integration; Central Environmental Authority; National Planning Department; Board of Infrastructure Investment; Regional Industry Service Committees; Industrial Development Board; Provincial and local governments; Sri Lanka Standards Institute.

1. INTRODUCTION

Sri Lanka has a comprehensive legal and institutional infrastructure to protect the environment. Laws to control air, water, and land pollution have been established by Parliament, and land use planning has been applied to government land sale and settlement programs. A central environmental authority is responsible for overseeing environmental impact assessments - required of all government development projects - and for the planning of national environmental and natural resource policies. Numerous nongovernmental organizations exist which engage in environmental education and lobbying. Yet, according to this report, there is a widening gap between Sri Lanka's environmental goals and achievements. Water pollution, soil erosion, deforestation, and wildlife poaching threaten many areas of the country. Inadequate management skills, ill-defined project planning, poor law enforcement, confusing procedures, inadequate training, and poor facilities have hindered the effectiveness of legislation combating environmental problems. In addition, poor interagency cooperation, inefficient use of existing data, and lack of policy leadership have frustrated private and public environmental efforts. Improved funding, leadership, environmental education, and

nongovernmental organization cooperation are among the recommendations made to help strengthen environmental laws and institutions.

2. LEGISLATION

The first legislation related to environment was passed by the British Colonial Government to control the land resource, by taking over unused or unutilized land from the public. The Crown Lands Ordinance (1840) declared that all forests, waste, unoccupied or uncultivated land shall be presumed to be the property of the Crown until the contrary thereof be provided. This ordinance encouraged the use of land, increasing environmental damage. Subsequently a number of conservation and protection oriented Acts such as the Forest Ordinance (1907), Fauna and Flora Protection Ordinance (1937) and the Soil Conservation Act (1951) were posed to mitigate the environmental damage. After that, more than 100 separate statutes have been enacted over the last 100 years that have some connection with environmental protection and natural resources management.

Most of these statutes follow a regulatory policing and control approach. State protectionism was always stressed. This tendency continued until 1972, the year on which United Nations Conference on the Human Environment was held, which stressed the need for environmental management rather than protection by the State. From the late 1960s, to the mid 1990s, emphasis was laid on participatory environmental management. Several Acts were revised to focus more on a participatory approach. The revisions in 1996 to the Fisheries and Aquatic Resource Act envisaged the establishment of a Fishery Management Committee, the 1988 revision to the Irrigation Ordinance mandated former organizations, and the Forest Ordinance revision of 1988 contained provisions for participatory forestry. Public participation was also introduced to the Environmental Impact Assessment process by the National Environmental (Amendment) Act of 1988.

The focus has now moved to a wide-ranging, comprehensive framework for environmental management for sustainable development. These new statutes seek to move away from simple regulation to an effective management framework, which enables government officials to interact with community resource users and the private sector. The Mines and Minerals Act No.33 of 1992 provides mechanisms for reducing pollution resulting from mining. The new draft National Environmental Bill presents a framework for National Environmental Policy, involving both the public and private sector. Section 2 of this draft bill states that “every person shall make every practicable effort to follow the path of sustainable development”. s 3 includes the objectives of sustainable development. A draft Forestry Bill has also been developed. A draft Water Resources Bill is also under preparation for managing the available water resources. Amendments to the Coast Conservations Act are also under way.

Implementation of environmental policies falls to M/TEWA, a relatively weak ministry within the government. The Central Environmental Authority’s (CEA) enforcement capabilities and political weight within the bureaucracy are widely recognized by government, business and nongovernmental organization (NGO) sectors as being

deficient. CEA relies principally on its own agency's resources to conduct monitoring, even though the agency's technical and laboratory capacity is limited. Industry does not generally monitor itself.

Sri Lanka developed a National Environmental Action Plan (NEAP) in 1991, which was revised and strengthened in 1994. Of particular relevance to US-AEP is the NEAP's emphasis on combining national economic development and sound environmental management by building environmental considerations into all levels of policy planning to achieve sustainable economic development. The NEAP focuses on clean industrialization, based not only on the long-run costs of disregarding the environment but also on Sri Lanka's shortage of energy resources and the lack of international competitive advantage in polluting industries.

3. INDUSTRIAL POLICIES AND LAWS

Under the government's economic liberalization program, tariffs have been substantially reduced, although some effective rates of protection still exceed 100 percent (e.g. for paper and metal products). External liberalization in manufacturing has been accompanied by internal deregulation and privatization of a large number of state-owned enterprises, causing a decrease in the share of publicly owned, value-added manufacturing from 60 percent in 1981 to 15 percent in 1991. As mentioned in s 3, BOI administers a series of incentives for new and existing manufacturing companies to invest in advanced technologies.

The government's policies of encouraging private investment and fostering an industrialization program include increased reliance on BOO/BOT arrangements to finance infrastructure projects. The Board of Infrastructure Investment is responsible for all aspects of BOO/BOT project development in coordination with the key policy and implementing ministries, however, privatization of infrastructure has progressed slowly. Most emphasis is on the power sector, although to date no private power projects exist.

The various ministries with important roles to play in economic and environmental policies have historically communicated poorly among themselves. In an attempt to rectify this problem, in the early 1990s the GOSL established the Inter Ministerial Environmental Council consisting of permanent ministry secretaries to coordinate environmental policies with other government policies and plans. This council no longer exists, but the GOSL has recently established a council to review major project proposals, including industrial estates and major industrial facility expansions with respect to their economic and environmental viability. The fifteen-member inter ministerial council includes CEA, BOI, UDA, M/ID, and the Water Supply and Drainage Board. In spite of attempts to improve coordination, integration of environmental concerns into industrial policy is currently limited. One promising exception is the GOSL's recent adoption of a policy for siting high-polluting industries on an industrial estate.

The Private Sector

With the cost of capital currently in the mid 20% range, Sri Lankan industries are having a difficult time obtaining finances for new investment. This issue, combined with the fact that investment in environmental equipment is generally viewed as nonproductive, has resulted in a low level of environmental expenditures. In general, industries in Sri Lanka view environmental concerns as imposed by CEA; the notion that good environmental management is important to competitiveness has not been widely accepted. Environmental considerations are usually made in a reactive mode, for example in response to an enforcement action and typically involve adding end-of-pipe "quick fixes" that do not consider the potential for clean production.

Given this situation, industry has little interest in ISO 14000; a recent survey found that less than 15% of the industries surveyed had even heard of ISO 14000. The two largest business organizations in Sri Lanka however, described below, have recently become seriously engaged in environmental matters.

1. **Federation of Chambers of Commerce and Industry of Sri Lanka.**
   The Federation and Ceylon Chamber of Commerce have the greatest breadth of contact with Sri Lankan industries. Since 1995 the Federation has worked closely with CEA and M/ID to heighten industry awareness of environmental concerns and of industries' obligations under Sri Lanka's laws and standards, including workshops and training programs.

2. **Ceylon Chamber of Commerce.**
   With the assistance of USAID's NAREPP project, the chamber has established an environmental unit that will act as an information clearinghouse on environmental issues for the private sector. Events during its first year of operation have included a workshop for local environmental consultants, an industry survey of environmental concerns, and formation of an environmental task force (including industry, NGOs, and CEA). The Chamber's environmental activities are focused on representing private sector interests in national environmental policy and on providing guidance to industry on environmental regulations, environmental business opportunities and clean technologies.

Other private sector environmental initiatives in Sri Lanka include the following:

ITMIN is a new private sector venture, launched in December 1994 to serve as an information broker on innovative technologies. Startup funds have been provided by the United Nations Development Program but with the express objective of leveraging these funds to establish a self-supporting venture. ITMIN currently has a mix of government and private shareholders, including the Ceylon Institute of Scientific and Industrial Research. ITMIN manages *CleaNet*, an initiative funded by the World Bank to provide an online clearinghouse of specialized information on environmental technologies, including assistance available locally and internationally. It has recently become operational and provides information on environmental technologies developed and used in Asia.

Environmental engineering and consulting. The number of environmental firms serving industrial needs is small. CEA maintains a list of environmental companies but does not evaluate these firms on the basis of performance. These firms are typically small and not aligned with major, internationally recognized environmental engineering firms. The only in-country presence of the large firms is through project offices under donor assistance programs.

4. LEGAL AND POLICY DEVELOPMENTS OF PARTICULAR RELEVANCE TO NDUSTRIAL AND URBAN ENVIRONMENT MANAGEMENT

Industrial Siting Policy: In 1994 the Cabinet adopted a policy requiring that all new industries that are classified as high polluting (as defined by CEA) be located on industrial estates especially if they generate large quantities of solid and liquid wastes. M/ID is implementing this policy and recently initiated a program to foster development of industrial estates throughout the country. With the assistance of the USAID mission's *Natural Resources and Environmental Policy Project* (NAREPP) (see endnote 75), M/ID has assessed a number of candidate sites and is developing industrial estate siting and development policies and practices.

Industrial Pretreatment Plan: Under World Bank funding, Sri Lanka plans to construct common wastewater treatment facilities under BOO/BOT arrangements for two industrial zones near the metropolitan Colombo area: Ekala-Jaela and Moratuwa/Ratmalana. To minimize the uncertainties for private investors, CEA is requiring existing industries in these zones to declare by early 1997 whether they will comply with the agency's effluent standards by installing their own pollution controls or by committing to a pretreatment program and paying for treatment of their effluents by the central facilities.

Amendments to the National Environmental Act*:*
The Cabinet is currently reviewing a draft Bill that would essentially replace the National Environmental Act with sweeping new legislation that would fundamentally change the framework of the Sri Lankan environmental policy regime. Although the prospects for enactment by the legislature are uncertain at this time, the law if passed, would have major implications for Sri Lanka's approach to environmental management.

Coast Conservation Act, 1981 No.57: to make provisions for Coast Conservation including the preparation of a Coastal Zone Management Plan based on the surveys within the zone including all coastal wetlands with an indication of their significance as fisheries or wildlife habitats (s 11) and taking over some functions of Crown Lands Ordinance No.8 of 1947.

Marine Pollution Prevention Act 1981 No.59: to provide for the prevention, reduction and control of pollution in Sri Lanka waters and for matters connected with including power to take action against any marine pollution caused to the living marine resources and wildlife.

Legislative Background to the Development of the CEA:
In the past in Sri Lanka there were a number of statutes with scattered provisions pertaining to natural resources management, pollution control and environmental planning. However, entire environment management was not included in any of these Acts. Hence there were serious shortcomings and difficulties in the legal framework. Many laws had been enacted during the colonial period. The scope and nature of these laws are severely restricted, as the main objectives of the colonial administration had been oriented towards the exploitation of natural resources and revenue collection. These laws had not been enacted for conservation and resource management. Due consideration had not been given to the environment, development and sustainable growth parameters. Therefore, with the liberalization of the economy in 1977 paving the way for rapid industrial development, there was a necessity to create a central organization for environment management.

As a result, the Central Environmental Authority (CEA) was created in 1981. This organization is discussed in detail in the following section on Sri Lanka's institutions.

5. PUBLIC INFORMATION POLICIES AND LAWS

At present, the only public disclosure requirements in place are for EIAs, which must be made public and available for comment before a project decision pursuant to the National Environmental Act. NGOs have worked effectively with government to ensure that this unusual and highly effective window on government is carefully maintained. Under the new environmental statute pending before the Sri Lankan legislature, public disclosure of environmental information would become a mandatory requirement for government agencies.

C. INSTITUTIONS

Key Issues: Environment Capacity Building; Environment data Base; Environment Information; Environment Education; Technical man power;

Key Institutions: Ministry of Environment and Natural Resources; Department and Mahaweli Authority; Department of Wildlife Conservation; Coastal Conservation Department; National Environmental Steering Committee, Metrological Department; Ministry of Agriculture, Lands and Forestry; Natural Resources, Energy and Science Authority; Ministry of Fisheries and Aquatic Resources; Ministry of Transportation, Environment, and Women's Affairs; Wayamba Environmental Authority; Ministry of Finance, Planning, Ethnic Affairs, and National Integration; Central Environmental Authority; Ministry of Finance, Planning, Ethnic Affairs, and National Integration; National Planning Department; Board of Infrastructure Investment; Regional Industry Service Committees; Industrial Development Board; Provincial and local governments; *Sri Lanka Standards Institute*

1. INTRODUCTION

Sri Lanka's current constitution established a strong president with an appointed Prime Minister and an elected Parliament. Ethnic problems spurred creation of nine provincial governments, which have taken on increasing responsibilities for environmental management. Beginning in the early 1980s, Sri Lanka passed several laws designed to integrate environment into its economic development program. The National Environmental Act of 1981 established *(a)* the Central Environmental Agency, *(b)* the requirement for EIAs, and *(c)* with amendments in 1988, a strengthened EIA process and a new environmental protection licensing system, which affected all development-oriented government agencies. The government has been assisted by strong donor interest in environmental programs and institution strengthening, however efficient government management has been frustrated by a lack of rewards and incentives for action and by the large numbers of ministries, sub-ministries, and agencies whose jurisdictions often overlap.

2. KEY MINISTRIES AND ENVIRONMENTAL INSTITUTIONS

Ministry of Environment and Forestry

In 1989 a Cabinet-rank ministry was crated to deal specifically with environmental issues, underpinning the government's recognition of the importance of the subject. Since its establishment, the Ministry of Environment and Forestry has taken over policy-making and inter-ministerial coordinating functions from CEA. The latter function is now undertaken through inter-ministerial coordinating committees set up for various purposes.

The Secretary to the Ministry chairs the committees while the CEA acts as the implementing agency for the policies of the Ministry.

The Ministry of Environment and Forestry is also the national focal point for matters concerning international Conventions related to the environment. The Ministry has established a Montreal Protocol Unit within its structure to coordinate all matters related to the Montreal Protocol. A Sri Lankan scientist, who is the technical adviser to the Ministry heads the Unit.

Ministry of Transportation, Environment, and Women's Affairs (M/TEWA)

In conjunction with the Ministry of Policy, Planning, and Implementation, M/TEWA is principally responsible for environmental policy. The ministry was established in 1990. Efforts to strengthen the environmental component of this ministry and its predecessor have been undertaken by USAID and a number of other donor agencies with steady, albeit limited, success.

Ministry of Internal and International Commerce and Food

The Sri Lanka Export Development Board (SLEDB) and the Department of Commerce, which come under the Ministry of Commerce, are the two State agencies concerned with trade-related environmental policy issues.

(a) Sri Lanka Export Development Board

SLEDB is the premier State institution with regard to the promotion and development of exports. With regard to the tea sector, its focus is more on value-added tea products, as opposed to traditional bulk tea exports. The Board constitutes a channel through which product sector-oriented advisory committees and exporter associations which function under its auspices can invite attention to environment related issues that affect trade.

(b) Department of Commerce

The Department of Commerce, which has trade councilors attached to Sri Lankan missions in several countries, serves as a source of information concerning markets for environmentally friendly products vis-à-vis the external trade policies of Sri Lanka. It also plays an important role in cases where Sri Lanka is a signatory to international trade-related agreements which have a bearing on environmental policy decisions.

Ministry of Agriculture and Lands

The Ministry of Agriculture and Land plays a vital role as the ministry responsible for policy decisions concerning land use, soil degradation and soil conservation all of which have an important bearing on environmental policy decisions.

The Land-use Policy Planning Division of the Ministry is in the process of preparing a land-use policy planning document which involves the consolidation of several existing Acts relating to land use, soil conservation etc.

The Department of Agriculture, which functions under the direction of the Ministry of Agriculture and Lands, also has a Land and Water Use Division, which considers policy issues related to the use of agricultural land.

Ministry of Science and Technology

The Sri Lanka Standards Institution (SLSI) and the Ceylon Institute for Scientific and Industrial Research (CISIR), come under the management of the Ministry of Science and Technology. Some of the functions and services of SLSI and CISIR relate to policy decisions on environmental issues. SLSI, which has laboratory facilities and qualified staff, implements an export certification scheme for non-traditional export products from Sri Lanka. However, tea and tea products are excluded from that scheme. SLSI also plays a significant role in regard to the certification of products under the ISO 9000 series. It is expected to play a similar role in respect of the ISO 14000 series encompassing the environmental management systems.

CISIR, which also has laboratory facilities and qualified staff, carries out analysis of samples on a commercial basis to determine harmful residues or contaminants if any, in manufactured tea. Its services therefore bear upon environmentally related policy decisions albeit in an indirect way.

Ministry of Mahaweli Development

The Ministry of Mahaweli Development is responsible for the development of infrastructure and economic activities, as well as the social development of settlers related to the major river diversion project on the Mahaweli River. The Mahaweli Authority of Sri Lanka (MASL), which comes within the scope of the Ministry of Mahaweli Development, is responsible for the implementation of all activities related to the Mahaweli River diversion project.

MASL has authority over tea plantations in the upper Mahaweli region, which have been, or may in the future, be declared protected areas. It therefore plays a role in environment related policy decisions affecting those plantations. The Forestry and Environment Division of MASL works on all environment related activities of the tea plantation areas (particularly with regard to issues related to soil erosion and catchments for hydropower generation) within the management of MASL as well as coordinating those activities with the other agencies concerned and private tea plantation companies.

National Development Council

The National Development Council (NDC) is a high-level body recently established by the government, to examine policy issues related to areas of economic importance and make recommendations directly to the President. It is comprised of experienced professionals from both the public and private sectors. Recommendations made by the NDC in relation to the plantation sector and which encompass environmental issues will have a bearing on policy decision-making.

Central Environmental Authority

As a manifestation of its policy perspective for the integration of environmental conservation with development, the Parliament through the National Environmental Act (NEA) No. 47 of 1980, established the CEA in the same year as it established the premier State institution for the protection and management of the environment. The National Environmental Act 1980 (amended in 1988) established both the Central Environmental Authority and the Environmental Council. The Central Environmental Authority is a corporate authority with executive functions in the field of environmental management. The Authority is empowered with administration of the framework legislation and is provided with wide powers to perform its assigned functions and duties. This includes coordinating all regulatory activities relating to the discharge of wastes and pollutants, and ensuring local authorities are promoting compliance. Its objective is to encourage the prudent use and conservation of land resources.

Major duties of CEA include:

(i) To recommend to the Minister on national environmental policy the criteria for the protection of any portion of the environment with respect to the use of values to be protected, the quality to be maintained, the extent to which the discharge of wastes may be permitted without detriment to the quality of the environment, long range development use and planning relating to the protection and management of the environment;

(ii) To undertake surveys as to the causes, nature, extent and prevention of pollution;

(iii) To conduct research on environmental degradation and develop criteria for the protection and improvement of the environment;

(iv) To specify standards, norms and criteria for the protection of beneficial uses and for maintaining the quality of environment;

(v) It is responsible for all regulatory activities relating to the discharge of waste and pollutants into the environment;

(vi) Evaluation of the beneficial and adverse impacts of development proposal on the environment; and

(vi) Provide recommendations and directives on certain aspects of environmental pollution to the local authorities;

The Environmental Council is comprised of senior officers representing practically every Cabinet-rank ministry including all development ministries which involve the

environment, along with representation from non-governmental organizations and professionals with expertise in environmental protection and management. The Council's role is to advise the Authority on environmental matters. The Authority then recommends to the Minister the basic policy on the management and conservation of the country's natural resources not only in order to obtain the optimum benefits from them, but also to preserve them for future generations. The national environmental legislation provides for comprehensive institutional coordination in the context of the devolution of power introduced through constitutional reforms in the country. A National Environmental Steering Committee has also been set up, which is responsible for integrating environmental management issues into the policies of sectoral agencies.

The main functions of the council are:

- To provide the CEA with general advice on matters pertaining to its responsibilities, powers, duties and functions;
- To advise on any matters referred to it by the CEA.

The Council serves as a structural arrangement for representing and integrating sectoral environmental interests into the policy decision-making process and also as a coordinating body for the different ministries and agencies. The CEA is empowered to delegate any of its powers, duties and functions to any government department or local authority with the concurrence of the minister in charge. However, such power of delegation does not preclude the CEA from exercising its responsibility to protect the environment and from administering the provisions of the NEA.

The CEA's effectiveness was hampered by its lack of regulatory authority until 1988 amendments to the National Environmental Act gave it legal authority to issue and enforce the 'Environmental Protection Licensing Scheme' as well as oversee EIAs conducted by project-approving agencies.

The enactment of the National Environmental Amendment Act No. 56, 1988 provided for the enhancement of the scope and powers of CEA to respond to evolving developmental needs. The salient features of the amendments are:

- A wider provision for the CEA to engage in "the protection, management and enhancement of the environment; for the regulation, maintenance and control of the quality of the environment; and for the prevention, abatement and control of pollution";
- The widening of the composition of the Environmental Council to include seven members who represent the interests of voluntary agencies (for example NGOs) instead of the earlier total of three, and two members with adequate expertise or experience in environmental protection and management.

To achieve the above objectives, the CEA is structured into three main functional divisions: a Natural Resources Management Division, an Environmental Protection

Division and an Environmental Promotion Division. A director heads each division. The CEA carries out its functions with a staff of around 200, of whom 75 are professionals. Given its broad duties, the CEA lacks sufficient staff and financial resources to meet demands for increased industrial pollution control or engage other agencies in environmental enforcement.

Ministry of Finance, Planning, Ethnic Affairs, and National Integration

This institution is the central economic planning ministry of Sri Lanka. Among its responsibilities, the ministry guides the annual Public Investment Program, which is a mandatory planning document appraising all public investments planned for the next five years.

National Planning Department (NDP)

The NDP is responsible for preparing the Public Investment Program and appraises the economic and financial viability of all projects submitted to the Cabinet for approval. It has established an informal environmental working group to review the environmental impacts of projects as needed. The National Water Council falls under this department and is the focus of an Asian Development Bank project to develop a strengthened legal and institutional framework for water resource management.

Urban Development Authority (UDA)

The UDA has wide powers to acquire, develop, and dispose of lands and properties and to exercise stringent controls on urban development activities. The UDA has established industrial estates in various regions of the country by acquiring land for development and selecting industries via a committee comprised of representatives from the Ministry of Industrial Development, the Board of Investment, provincial councils and the Industrial Development Board.

Board of Infrastructure Investment

Having recently replaced the Secretariat for Infrastructure Development and Investment, the Board has a leading role in infrastructure-financing policies in Sri Lanka and is the counterpart institution for USAID's Promotion of Private Infrastructure Project. In 1993 the secretariat developed guidelines for build-own-operate/build-own-transfer (BOO/BOT) projects to be used by prospective investors and state agencies promoting private financial packages from infrastructure projects.

Board of Investment (BOI) of Sri Lanka

This body is responsible for promoting, approving, and assisting foreign investment and is empowered to grant a wide range of incentives to projects in selected sectors. Renamed and expanded in 1992, BOI's objectives are to broaden the economic base of the country and generate economic development in addition to promoting foreign investment. BOI is

also responsible for planning and overseeing industrial development in three export promotion zones and three industrial estates, including environmental oversight and EIA compliance. BOI also has environmental jurisdiction over industries it approves for location outside export promotion zones and industrial estates and has authority for issuance of environmental protection licenses to these industries.

Ministry of Industrial Development (M/ID)

M/ID has major responsibility for tracking and promoting industrial development, facilitating private sector growth, providing industrial infrastructure, assisting domestic industry in financing investments and strengthening regional industrial development strategies. M/ID has the responsibility for implementing Sri Lanka's new industrial estate siting program for polluting industries, a key component of its national industrialization policy.

Industrial Development Board

The Board is responsible for promoting and developing small and medium-sized industries and established some of the nation's first industrial estates prior to creation of the UDA. These estates are equipped with basic facilities such as water supply, roads, drainage, waste disposal, electricity, and telecommunications.

Regional Industry Service Committees (RTSCs)

The RTSCs serve as regional extensions of M/ID in planning and promoting industrial expansion at the local level and providing technical assistance to local industries. Efforts are being made to strengthen the committees' ability to develop industrial estates programs effectively in each region. The committees have recently formed bodies that include the Industrial Development Board, UDA and CEA in establishing regional industrial policies, particularly with respect to industrial estates.

Fiscal Incentives Committee

The Fiscal Incentives Committee oversees implementation of Sri Lanka's fiscal incentives policies to encourage investment in advanced technologies. These incentives apply to *(a)* technologies that provide new products and services and process raw materials locally that are currently imported in processed form and/or *(b)* utilize local resources to produce public utilities and infrastructure services. Of particular interest to the U.S.–Asia Environmental Partnership (US-AEP), the committee provides duty and turnover tax waivers for the import of advanced environmental technologies.

Ministry of Housing, Construction, and Public Utilities

Within this ministry the **National Water Supply and Drainage Board** is the principal agency for developing urban and rural water supply and urban sewerage schemes. It is

responsible for removing water from the Kelani Ganga for supplying the Colombo Metropolitan Area and has lead responsibility for monitoring and maintaining sewerage systems in the cities of Colombo and Kataragama.

3. ACADEMIC AND RESEARCH INSTITUTIONS

Given the limited capacity of environmental companies, academic and research institutions perform much of the environmental monitoring and pollution control technology evaluation for Sri Lankan industry.

The Ceylon Institute of Scientific and Industrial Research is a quasi-governmental research organization, partially financed by government funding and revenues generated from consulting. The Institute's board of directors is appointed by the Minister of Science and Technology. The institute plays a leading role in the United Nations Industrial Development Organization's industrial waste minimization program and is accredited to certify laboratories under ISO standards.

University departments target environmental research on specific issues and offer Master of Science courses in environmental subjects. These include the University of Colombo (environmental sciences), PGIA/University of Peradeniya (environmental economics and natural resource management programs), University of Kelaniya (environmental chemistry and resource management), University of Sri Jayawardenepura (forestry), and University of Moratuwa (environmental engineering, environmental planning and town and country planning).

Universities also play a major role in private sector consulting, particularly in monitoring and assessment of treatment technologies and provision of turnkey packages for wastewater treatment facilities. Such activities are generally undertaken in partnership with private engineering companies. Moratuwa for example, extends extensive consulting services to private companies, particularly in designing wastewater treatment facilities and conducting effluent and ambient water quality monitoring.

Center for Environmental Studies: founded in 1992 at Peradeniya University, promotes programs in environmental education, research, and consultancy. The Center also conducts regular training workshops on EIAs for State, private sector and NGO officials and in August 1996 began offering a year-long postgraduate course on EIA. The course covers concepts and definitions, evolution of environmental policy, EIA processes in Sri Lanka, ecological foundations, socioeconomic dimensions, techniques in environmental assessment, project planning and case studies.

The National Building Research Organization: part of UDA, is a research and development entity concerned with the built (housing and construction) environment. The Environmental Division carries out industrial pollution surveys and monitoring as well as monitoring the quality of the atmosphere, land and drinking water. The Division also

provides industrial estate sitings, solid waste disposal surveys and planning recommendations.

4. FINANCIAL INSTITUTIONS

Commercial banks

Sri Lanka's banking sector suffers from a lack of competition and financial innovation. Although more than twenty commercial banks exist, competitive forces are weakened by the two state-owned commercial banks, which control about 60 percent of the sector's assets. Additionally the foreign banking sector has declined in importance since its rapid expansion.

Development Finance Institutes

The two private development finance institutes are the National Development Bank and the Development Finance Company of Ceylon. The latter has an environmental unit with two environmental engineers who are responsible for reviewing the environmental impacts of every project applying for loans. Although environmental aspects of proposed projects are a major concern, the Development Finance Company of Ceylon does not actively promote clean technologies or 'innovative technologies', opting instead for conventional technologies which are viewed as having lower risks

The Pollution Control and Abatement Fund

The Fund provides assistance to industries to encourage investment in pollution technologies. Funds are available through the National Development Bank, Development Finance Company of Ceylon, Sampath Bank, Hatton National Bank and Commercial Bank for matching grants for pollution prevention audits and investment loans for implementation of audit findings. The loan program has not been used extensively by industry, primarily because it is not very indulgent.

The Ministry of Forestry and Environment

The Ministry provides leadership for formulating and reviewing national environmental policy. The policy formulation mandate of the ministry includes setting standards, developing and reviewing regulations and providing advice on macro-economic policies to promote sustainability.

4. OTHER KEY INSTITUTIONS

Provincial and local governments

Under the CEA's industrial classification scheme, all industries that fall in the 'low-polluting' category are regulated by local authorities. This includes both licensing under the environmental protection licensing system as well as carrying out enforcement activities. The North Western Provincial Council, which has jurisdiction over Kurunegala currently has the most autonomy on environmental matters and enacted the Provincial Environmental Act in 1993.

Sri Lanka Standards Institute

The Institute sets product standards (most of which are not mandatory), which currently number more than 1200 for manufactured products, agricultural commodities, industrial raw materials, and production processes. Sri Lanka has adopted the ISO (International Organization for Standardization) 9000 series standards (ISO 9000 to 9004) on quality management and assurance and ISO 10011 standards on environmental management systems; no accreditation program is in place however, and few firms are certified. At the request of CEA, the Institute developed national standards including tolerance limits on industrial and domestic effluent, air emission norms, noise level criteria and classification of industries. The institute could play a lead role in ISO 14000 however little interest generally exists in Sri Lanka in establishing an accreditation/certification program.

5. PROVINCIAL LEVEL ENVIRONMENTAL MANAGEMENT AND INSTITUTIONS

Except for the North Western Province, there are no separate environmental statutes for other provinces. Therefore provincial environmental activities are also regulated under the NEA No.47 of 1980 as amended.

Three types of committees have been instituted within the provincial administrative set up to regulate and monitor the functions decentralized to provinces.

(i) District Environmental Law Enforcement Committee (DELEC) chaired by the District Secretary. This committee has been initiated by the District Secretary on the instruction of the Ministry of Environment and Forests. The Provincial Commissioner of Local Government represents the provincial council at this meeting.
(ii) Divisional Steering Committee (DSC) has been established as per instruction given by the Environment Ministry. The Divisional Secretary chairs this commitee.
(iii) Divisional Environmental Council (DEC) chaired by the Chairman of the Pradeshiya Saba.

The roles of the District Secretary under the DELEC are to: ensure that environmental law is enforced by the relevant Police Stations and Local Authorities; investigate public complaints regarding environmental problems; convene Committee meetings at least once every two months.

The roles of Divisional Secretary under the DSC are: coordination among all relevant agencies (governmental and non-governmental) within the Division; preparation of action plans to protect and manage divisional environment programs.

The Chairman of the Pradeshiya Saba, under the DEC is responsible for identifying local environmental problems and proposing solutions; preparation of proposals to improve and protect environment and for submit these proposals to the Divisional Secretary's Committee; ensuring public participation in environmental projects and programs; conducting awareness creation programs; and issuing Environmental Protection Licences (EPL) to 20 small scale industries as directed by the Ministry.

When addressing provincial environmental management, it can be observed that the Central Environment Ministry has failed to accept the Provincial Council as the main Provincial Authority in the field of environmental activities related to the province. The Ministry has been criticized for maintaining its linkages from the centre through to periphery government positions such as District Secretary and Divisional Secretary, effectively by-passing Provincial Councils. This situation has created a major communication gap between the provinces and the center. Additionally administration of the DS offices has been taken over by the Government depriving the Provincial Council of its implementation arm at the divisional level.

The Environment Ministry has withdrawn its environment officers from the Pradeshiya Sabas and attached them to Divisional Secretary's office. Environmental concerns enjoy very low priority within Provincial Councils System and receive minimal financial and administrative support due to:

(i) Absence of suitable legal framework within the Provincial Council system to monitor and regulate the environment;
(ii) Absence of a uniform organization structure which accepts the Provincial Council as the apex body in environmental activities within the provinces;
(iii) Inter agency differences/conflicts for example government agencies prefer to maintain their own identities without giving due consideration to devolved powers; and
(iv) Unavailability of sufficiently trained professional staff at the provincial level to handle activities.

Local authorities are concerned only in collecting of revenues through licensing and pay little or no attention to protection and preservation of the environment. Therefore, enforcement lacking and regulation of activities that harm the environment is inadequate. Activities that damage the environment such as gemming and land usage for various development projects go on un-standardized and without any clear regulatory criteria. Subsequent to this lack of vision and coordination, public input and opinion is either stunted and ineffective or alternately non-existent.

D. CONCLUSION

Legislative activism in the area of the environment began in Sri Lanka in the seventies in the wake of the Stockholm Conference. Parallel to most of the countries of the region, Sri Lanka enacted umbrella legislation encompassing all aspects of the environment as well

as sectoral legislation dealing with the issues like water, air, land, biodiversity, chemicals and wastes. Despite the enactment of strong legislation, the enforcement and compliance have been devastatingly weak. This can be attributed to inadequate awareness and education amongst the stakeholders; multiplicity of institutions and; inadequate technical capacity building. Moreover the industry continues to find it far cheaper to pollute than to adopt environmentally sound methods

In Sri Lanka, initiatives have been adopted by the Government to draft a new National Environmental Protection Act (draft NEPA) and a new draft Forest Conservation Act for environment management and resource conservation. The draft NEPA is a comprehensive law which updates existing legislation and introduces many new concepts including the 'polluter pays' principle, environmental tribunals, enforceable rights to a healthy environment, administrative penalties, green marking etc. The new draft forest law contains provisions for tenure agreements between communities and the Government to be registered and re-orients the classification and regulation of forests in keeping with modern trends.

Since the substance of the framework legislation is less detailed than the specific sectoral laws implementation of its principles inevitably calls for further enabling legislation. For example, extensive regulations have been issued under the National Environment Act 1980 as illustrated throughout this booklet. While both the specific environmental code and the framework/'umbrella' law options represent an integrated, coherent and holistic approach to environmental management, the framework law technique has the added advantage of flexibility. The basic legislation can remain intact while the implementing frameworks are reformulated in response to changes in socio-economic and ecological factors.

Legislation can also be an instrument for instituting novel approaches to dispute avoidance and settlement, and promoting public participation at all levels of 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 where public agencies remiss in their duties or violate the law.

The 1972 International Conference on Human Environment in Stockholm, also motivated Sri Lanka and other countries around the world to begin forming separate Ministries and Departments of Environment within their government. These new institutions have been mandated to enact and coordinate environmental laws and to provide a control for environmental pollution. The development of institutions such as Environment Ministries and Environment Agencies has been the direct result of governmental intentions and policy to avoid conflict and judicial overlaps among the various environment-related sectors. The long-established compartmentalized administrative structure, in which responsibilities become segmented amongst different agencies and remain separate, has created a barrier to sustainable development, which by definition requires a holistic approach. Following the Stockholm Conference, which brought into sharp focus the need

for coordination of sectoral activities with a view to achieving environmental protection, there has been a trend across the entire Asia region towards establishing bodies for coordinating these activities.

The multiple Sri Lankan Ministries described above are responsible for formulating environmental policies, the promotion of environmental considerations into development decision-making, and the monitoring of the environment including identification and transfer of technologies. 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 various heads of Ministries oversee the actions of the executive agency and monitor the activities of the other institutions and sectors that impact on the natural environment as well as promoting awareness. The Minister usually reports directly to the Parliament on the state of the environment.

CHAPTER VI

NATIONAL ENVIRONMENT GOVERNANCE

Key Issues: Air Pollution; Deforestation; Solid Waste Disposal Health Hazards; Air Pollution; Water Pollution; Soil Erosion; Land Degradation; Loss of Biodiversity and Wildlife; Industrial Pollution; Coastal Erosion; Solid Waste Disposal; Inadequate Capacity to manage Environment; Marine Biodiversity; Degradation of Marine Resources; Environment Education; Environment Capacity Building.

Policy Framework: National Conservation Strategy 1988; National Environmental Action Plan, 1994 updated in 1998.

Key Legislation: National Environment Act 1980; National Environment (Amendment) Act 1988; Control of Pesticide Act 1980; Coast Conservation Act 1981; Coast Conservation (Amendment) Act 1988; Marine Pollution Prevention Act 1981; Fisheries and aquatic resources Act, 1996; Forestry Ordinance, the Flora & Fauna Act, the Fisheries Act; National Environmental (Protection and quality) Regulation 1990; National Environmental (Noise Control) Regulation 1996; National Environmental (Noise Control) Amendment Regulation 1997.

Key Institutions: Ministry of Environment and Natural Resources; Department and Mahaweli Authority; Department of Wildlife Conservation; Coastal Conservation Department; National Environmental Steering Committee, Metrological Department; Ministry of Agriculture, Lands and Forestry; Natural Resources, Energy and Science Authority; Ministry of Fisheries and Aquatic Resources; Ministry of Transportation, Environment, and Women's Affairs; Wayamba Environmental Authority; Ministry of Finance, Planning, Ethnic Affairs, and National Integration; Central Environmental Authority; Ministry of Finance, Planning, Ethnic Affairs, and National Integration; National Planning Department; Board of Infrastructure Investment; Regional Industry Service Committees; Industrial Development Board; Provincial and local governments; Sri Lanka Standards Institute.

1. INTRODUCTION

This chapter undertakes the role of analyzing and drawing conclusions from the previous chapter. The previous chapter discussed three elements of Sri Lanka's environmental development: Sri Lanka's constitution; its legislation and policies and Sri Lanka's many institutional responses to environmental problems. While the discussion of each of these paramount elements of Sri Lanka's environmental framework produces observations and conclusions about each separate element, this chapter instead focuses on the amalgamation of the three into what is called Sri Lanka's national governance. By extending on the previous chapter's discussion, and focusing on a higher level of analysis,

different observations and important conclusions can be drawn. This chapter outlines Sri Lanka's growth from a traditional agricultural based rural economy with sustainable life styles to a more diversified and commercialized economy and comments on the evolution of it's national governance during this growth. The conclusion of this chapter can also be regarded as an analysis of the three elements from the previous chapter. The conclusions drawn are therefore more general and are essential to Sri Lanka's success in this area.

2. EVOLUTION OF NATIONAL GOVERNANCE

The past few decades has seen a transformation in Sri Lanka from a traditional agricultural based rural economy with sustainable life styles to a more diversified and commercialized economy trying to move away from total dependence on agriculture to solve the growing problems of unemployment and poverty. Successive governments allocated more and more resources for the construction of dams and irrigation works, expanded the area under cultivation, depleted forests, established industries, created infra-structure and expanded urban centers attempting to achieve a rapid economic growth rate and alleviate poverty. These development programs and the inherent pressures of an increasing population resulted in the degradation and depletion of natural resources.

Although the legislative framework for the protection of the environment such as the Forestry Ordinance, the Flora and Fauna Act, the Fisheries Act and Coast Conservation Act were in place, the institutional capacity for their implementation and development of programs was severely lacking. Continuing poverty accelerated the rate of environmental degradation. Problems associated with economic activities such as land degradation and deforestation, air and water pollution, health hazards, loss of biodiversity and climate changes emerged and recognizing these the Government passed the National Environment Act in 1980. To strengthen the institutional capacity to implement laws and regulations a regulating body called the Central Environment Authority was established. A separate Ministry for environment was also established. Thus in the eighties the government began to pay more attention to the environment. This chapter and its preceding chapter aim to illustrates the evolution of that commitment, giving detailed descriptions of the constitutional, legislative and institutional measures being implemented in Sri Lanka to conserve its environment.

With the 1992 Rio Earth Summit, the Government of Sri Lanka began to follow a more focused and a concerted policy towards sustainable development. During the term from 1996 to 2000 the Government further pursued the objectives of accelerating economic growth, while ensuring equity and a higher quality of life, particularly for the poor by following a strategy possessing the following main features.

- Market friendly economic policies;
- The private sector as the engine of growth;
- Raising overall investment by creating a conductive policy environment, peace and stability;

- Development of ports, shipping and financial and capital markets to be major regional service center;
- Policy measures to make industry and agriculture internationally competitive;
- Promotion of exports through appropriate tax tariffs, interests and credit policies;
- Welfare programs to mobilize the resources of the poor for the development process;
- Private investments in manufacture and infrastructure development.

A National Environment Action Plan was developed to provide the policy framework for sustainable development. A participatory approach was followed in preparing this policy. In addition a Forestry Master plan to determine land use and promote forestry development as well as a Coastal Zone Management Plan was developed. A National Biodiversity Action Plan has been prepared with World Bank Assistance to protect and manage biodiversity. In order to integrate environment concerns into development plans, the National Planning Department has introduced environmental screening of all public sector investment projects. Environment Impact Assessment (EIA) has been made mandatory via statute for global trade and international cooperation.

Despite such developments Sri Lanka faces economic difficulty. Twenty percent of the export earnings of Sri Lanka are derived from agriculture exports consisting mainly of tea, rubber and coconut. Volatile commodity prices have an adverse impact on the export earnings and the economy. The market restrictions on garment exports etc. restrict the growth of Sri Lankan industry and exports; this limits the ability to generate export earnings. Also physical limitations to the expansion of agriculture make it extremely difficult to mobilize domestic resources for development thus a more equitable trading system supportive of sustainable development is needed. In the context of limited domestic resources, enhanced international cooperation is vital for achieving the goal of sustainable development. Since economic development is essential for the prevention of environmental degradation, trade, transfer of funds and technology should not be subjected to environment conditions.

Constitutional, institutional, legislative and policy frameworks.

3. CONCLUSION

South Asian countries such as Sri Lanka have witnessed a steady worsening of governance standards, essentially because of mutual distrust and threats from internal and external sources. In fact, institutional and policy shortcomings, have been one of the major causes behind overall sustainable development failures in Sri Lanka. The country has suffered from a lack of continuous focused attention to environmental and resource management by the national governments.

An encouraging trend in recent years has been that environment ministries and state agencies have been restructured and empowered with greater institutional strength to promote better vertical and horizontal co-ordination amongst different agencies. New legislation, including strengthening of existing laws has empowered executives and also enabled judicial institutions to oversee the effective enforcement of environmental

measures. Sri Lanka has also benefited from prominent trans-national arrangements for strengthening the sub-regional institutional framework for sustainable development. These include the South Asian Association for Regional Co-operation (SAARC), South Asian Co-operative Environmental Program (SACEP) and South Asian Preferential Trading Arrangement (SAPTA).

Despite this, success will be unobtainable unless it is recognized that good governance requires the reform of decision-making processes so that local communities are included as participants. Public participation can take many forms ranging from the implementation of government-created policies through the devolution of decision-making authority. In its deepest form, public participation seeks to involve civil society in all steps of planning, implementation and evaluation of policies and actions. Benefits of local community empowerment include increased public eagerness to participate in local programs, leading to better implementation of decisions as well as community enrichment and the building of social capital. Sri Lanka is currently involved in a process of decentralization aiming to support sustainable development, however shortcomings still exist.

Long before the end of the last century, declining environmental quality and increasing public concern over the environment, both locally and globally, had begun to create a demand for the strengthening of environmental protection. Policy-makers in Sri Lanka therefore began the decade of the 1990s with a mandate to improve the state of the environment. Improvements in some dimensions of environmental quality have been, and are continuing to be achieved. Among these are the improvement in governance by public authorities, through strengthening of institutions, enhancements in the formulation and implementation of policies, growing environmental awareness and public participation.

Further success and vast new opportunities for improvements in social-economic welfare can be obtained via globalization. Globalization is perhaps best conceptualized as an accelerator of change, rather than as a process that necessarily entails positive or negative outcomes. The challenge and the opportunity for countries such as Sri Lanka is harnessing the processes of globalization to the goals of sustainable development, including reductions in poverty and improvements in the environmental performance of economic activity. Indeed, it is difficult to imagine that the challenges of sustainable development in the region can be met without effective deployment of the tremendous resources and know-how that are contained within the global economy as a whole. At the core of this process is the private market economy but public policy also has a crucial role to play in shaping processes of private investment and in creating the enabling environment in which private investment takes place.

It could also be argued that environment ministries in Sri Lanka are still either not central in the government decision-making structure, or have limited influence over sectoral agencies. In order to implement a sustainable development approach, which integrates economic, environmental and social priorities at an institutional level, sectoral ministries and offices need to be harmonized. A planning or development agency is an appropriate

place to do this. Many institutions of Asia and the Pacific region have incorporated environmental concerns into their economic decision-making through their Five Year Plans. Often there are specific environmental sub-sections within a planning ministry that provide environmental inputs into the National Plan after organized consultations with working groups from other sectoral ministries, including the environment ministry, as well as experts. Such practices would assist Sri Lanka if commitment were given to their implementation.

CHAPTER VII

JUDICIARY AND ENVIRONMENT

Key Issues: Pendency of Cases, Technical and Scientific nature of Cases; Cumbersome Procedures; Dissemination of Judgments; Training of Judges and Advocates; Execution and Compliance of Courts Orders; Education and Awareness.

Key Institutions: Supreme Court; High Courts; District Courts; Tribunals, Authorities; Agencies etc.

1. INTRODUCTION

A recent study has shown that fundamental rights jurisdiction in Sri Lanka has expanded monumentally over the past few years. From a trickle of cases in the late seventies and early eighties there is now a flood of such applications pending before the Supreme Court.

One reason for this huge growth is attributed to the fact that the fundamental rights jurisdiction provides a remedy that is a relatively quick one. Applications are made before the highest court, thus fundamental rights proceedings begin and terminate with a single application in the Supreme Court and there is no appeal. In most cases an application is disposed of within two years, and on many occasions even quicker. This is relatively expedient compared to other areas of the law where proceedings, including the appeal or appeals, take much longer to conclude.

2. JUDICIARY

The Sri Lanka Supreme Court has begun to interpret many of the provisions dealing with fundamental rights liberally. This is particularly true of Article 12 (the right to equality before the law and equal protection of the law) and Article 13 (freedom from arbitrary arrest and detention). Initially the Supreme Court had been reluctant to make orders against the State. This has now changed and the Court has developed an active fundamental rights jurisdiction in recent years. Such willingness to deliver an order against the State where a violation has been established and the expansion of the jurisdiction though a process of interpretation are other reasons why the court docket has grown.

3. PRINCIPLES APPLIED BY THE JUDICIARY

The Supreme Courts and High Courts in many countries of South Asia have innovated the concept of “public interest litigation” and opened-up an endless access to justice to entertain and examine violations of fundamental and constitutional rights of large sections

of people. It lowered the threshold of locus standi or the 'standing-to-sue' by promoting public-spirited persons to litigate on behalf of the deprived sections of society. Secondly, the rigidity of rule of pleading (even a postcard was treated as a petition) and burden of proof was relaxed and in appropriate cases the court itself established fact-finding commissions. The court held that "the constitutional promise of a social and economic transformation to usher in an egalitarian social order and a welfare state was the justification for this liberal judicial approach". Effective solutions to the problems peculiar to this transformation were not available in the traditional judicial system. The proceedings in a public interest litigation are, therefore, intended to vindicate and effectuate public interest by prevention of violation of the rights, constitutional or statutory, of sizeable segments of the society, which owing to poverty, ignorance, social and economic disadvantages cannot themselves assert, and quite often are not even aware of those rights.

The technique of public interest litigation has provided a speedy and effective remedy for violation of fundamental rights. In order that these public causes are brought before the Courts, the procedural techniques, judicially innovated especially for the benefit of public interest action recognized the concomitant need to lower the locus standi thresholds so as to enable public-minded citizens or social action groups to act as conduits between these classes of persons and the forum for the assertion and enforcement of their rights.

4. CONCLUSION

The Sri Lankan Supreme Court has witnessed a rapid and surprising growth in the number of environmental matters adjudicated in recent years. This evolution can be attributed to a number of factors. The Court has taken an active and liberal approach to the interpretation of fundamental rights, become more willing to make orders against the State and relaxed the rules of standing, pleading and burden of proof hence extending the arms of justice to all sections of society. Another fundamental progression has been the advent of 'public interest litigation'. This has seen judicial techniques innovated to deal with public matters brought before the Court expeditiously and with an aim to ensure "the constitutional promise of a social and economic transformation to usher in an egalitarian social order and a welfare state".

CHAPTER VIII

SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: WATER

Key Issues: Trade Effluents; Ground Water Contamination; Wastewater Treatment; Cleaning of Rivers; Water quality Management; Human Health.

Policy Framework: National Conservation Strategy 1988; National Environmental Action Plan 1994 updated in 1998.

Key Legislation: National Conservation Strategy 1988; National Environmental Action Plan 1994; National Environment Act 1980; National Environment (Amendment) Act 1988; National Environmental (Protection and quality) Regulation 1990.

Key Institutions: Ministry of Environment and Natural Resources; Department and Mahaweli Authority; Central Environmental Authority; Ministry of Agriculture.

1. INTRODUCTION

Sri Lanka is endowed with rich water resources emanating from the central highlands that receive rain during the monsoons. The mean annual rainfall ranges between 900mm to 6000mm, with an island wide average of about 1900 mm, (about two and a half times more than the world annual mean of 750mm). The country can be divided into wet and dry zones with a mean annual rainfall of 2424 mm and 1450 mm respectively. The total volume of fresh water received annually is 13,230 million m3. The average annual river flow, which is 31% of the rainfall, is 40,680 million m3. Sri Lanka has abundant water resources in aggregated terms, but this overall picture is misleading owing to the high degree of variation in the availability of water, both seasonally and regionally. Surface waters are carried radically from the central hills through 103 distinct river basins covering 90% of the island. Their catchments areas range from 9 to 10327.

The threats to these unique water resources are described in this chapter. The discussion initially continues on the nature and demands of Sri Lanka's water resources before the threats to it are simply described in two broad categories and the major polluting industries identified. A specific case study is used to illustrate the problem of eutrophication and how it occurs. Further discussion focuses on the ground water contamination, the example of the North West province cited accordingly. Another problem area of water pollution due to urbanization and industrialization is also described, again the use of a practical example; the Kelani River is employed. The later

part of the chapter briefly describes the legal and institutional measures involved in responding to this major environmental and social issue.

2. WATER RESOURCES OF SRI LANKA AND CLIMATIC ZONES BASED ON RAINFALL

The Mahaweli is the longest river draining 16% of the country and carrying water from the wet zone to the dry zone. Some rivers produce shallow flood plains in their lower reaches referred to as 'villus', which may be permanently connected to rivers or remain isolated. Flood plains associated with rivers are best represented along river Mahaweli, the Kala Oya and the Modaragama Aru. The most extensive flood plain of the Mahaweli covers around 50,000 hectares. Riverine marshes and flood plains convey floodwaters to downstream regions. Many of the 41 wetland sites are facing threats owing to conversion into housing, agriculture and saltpans with some affected by siltation and pollution. In the southwestern coastal zone, wetlands act as sponges by gradually releasing floodwaters and storm water received from urban areas. Sri Lanka's inland waters include ponds, marshes and man-made lakes and constitute one of the highest densities in the world. The area under water bodies covers 2905 sq. km. or 4.43% of the total land area. The dry zone possesses a sophisticated irrigation system of reservoirs and canals built mainly for rice cultivation. There are 309 major irrigation reservoirs (serving over 80 hectares each) and nearly 18000 minor irrigation reservoirs, of which around 12,000 are currently operational. Some of these reservoirs date back to 4000 years.

Reservoirs can be categorized into two distinct groups, the recently constructed irrigation and hydro-power reservoirs such as Kotmale, Victoria and Randenigala in the upper montane course of the Mahaweli River, and the older shallow multipurpose irrigation reservoirs of the lowland dry zone. Both types of reservoirs are linked to an aquatic network under the control of Mahaweli Authority of Sri Lanka (MASL).

The estimated groundwater potential of the country is 780 000 hectares per annum. Rainfall is the primary source of groundwater. Its contribution to the groundwater recharge is estimated to be 7-30% (Anon 2000), or 200 - 600 mm/year. The rate of recharge varies from one geologic formation to another. There are several aquifers with substantial groundwater resources in the limestone area in the North and West of the Island. Located in the Northwest is a major aquifer with the highest potential spreading over 40 sq.km with a water potential 5-20 million m3/year.

Pressure on Water Resources

Rivers often form the main link between interacting ecosystems. There are two aspects of water pollution: the human impact on aquatic systems such as rivers, wetlands, reservoirs and ground water. They arise as a result of direct changes to water bodies through river diversions, the connecting of watersheds, damming of rivers which fragment their longitudinal integrity and the regulation of rivers which break the lateral gradients or links between land and water. The indirect effects are caused by impacts of land use in the

catchment areas such as deforestation, plantations and human settlements. Water resources are at times subjected to conflicting multiple demands such as domestic uses, agriculture, health and sanitation, inland fisheries, hydropower generation, industrial and commercial uses, recreational and other activities. The stage has been reached where demand for water exceeds availability in some regions, which may lead to a widespread problem of water scarcity in the future with an increasing population, urbanization and industrialization. Well-planned management of water resources is required to harmonise the multiple uses of aquatic resources and avoid possible conflicts in future.

The major intentional (direct) pressures on water resources are agriculture, urbanization and industrialisation, which change land use patterns. Excessive use of agrochemicals and chemical fertilisers, release of industrial effluents, domestic waste and sewage and dumping of solid waste into waterways cause unintentional (indirect) pressures. These pressures collectively interact resulting in complex impacts on water resources.

3. POLLUTION OF INLAND WATERS

The major water pollution issues could be categorized as pesticide pollution, nutrient pollution, groundwater pollution due to agriculture and pollution due to industrialization and urbanization.

The major effluent generating industries have been identified as textile dyeing and bleaching, food processing, leather tanning, metal finishing, agro produce, sugar, distilleries, breweries, pulp and paper, leather and tanning and mineral products. According to CEA data, about 50% of the industries with EPL possess pollution abatement measures.

One government initiative are Industrial Parks established to provide for the use of clean technology and central water treatment facilities. Industries outside these parks, especially those established prior to the introduction of environment standards adopt engineered waste disposal methods in order to avoid contamination of adjacent water bodies and ground water aquifers.

Eutrophication and Blooming in Kotmale Reservoir

While recent data on pesticide residues in water resources is lacking, given the prevalent use of agrochemicals in agriculture there is little doubt as to the existence of pesticides in water and resultant effect of bioaccumulation in animal tissues.

Eutrophication, the process of nutrient enrichment of stagnant waters due to excessive use of fertilizer, is becoming a critical issue. A case study of the problem of eutrophication and blooming in the recently constructed Kotmale reservoir has been undertaken. The consequent risk of high phosphate levels in Nuwara Wewa and to a lesser extent in Tissa Wewa (both in Anuradhapura District) is severe. Similar studies for the surface waters in Mahaweli System ‘H’ revealed high agricultural agrochemical inputs. Kandy Lake and

Lake Gregory are also victims of nutrient enrichment. Water quality surveys of many irrigation reservoirs and channels in Mahaweli System 'H' in the Anuradhapura and Polonnaruwa districts were found to contain high nutrient levels.

4. A CASE STUDY ON NUTRIENT ENRICHMENT IN KOTMALE RESERVOIR

The Kotmale reservoir is the upper reaches of the chain of upland hydropower and irrigation reservoirs built under the Accelerated Mahaweli Development Project by constructing a dam across a "V" shaped mountain basin. The reservoir was filled up to full supply level in 1986. The upper Kotmale catchment area is devoted mostly to tea cultivation with a resultant intense application of fertilizer. The objective of the study was to assess the limnological status of the reservoir and to monitor the nutrient loading process via its upper Kotmale catchment. The investigations were conducted from 1986. In 1991, the fifth year after it reached full capacity, the reservoir was covered with a thick bloom of Microcystis aeruginosa. The early results of the investigation which is currently in progress, indicated the following:

- The Kotmale Oya tributary brings the highest load of nutrients through the upper Kotmale catchment, covered with dense tea estates.
- During the rainy season, the nutrient in the bottom hypolimnetic region of the reservoir was entrapped due to thermal stratification and hence was not able to surface for bloom formation.
- The upstream region of the reservoir received high nutrient loads through the Kotmale Oya tributary.
- During droughts, when the water level drops below 15m in the upstream region, mixing of nutrients was facilitated and the reservoir reached eutrophic status.
- High nutrient concentration (Phosphate and Nitrates), high temperature and high light intensity during droughts were favorable for the initiation of bloom formation in the upstream region.
- Bloom formation was thus initiated and drifted towards the dam due to wind action and covered the entire reservoir.

Ground Water Pollution

The unconsolidated sands of the coastal areas act as important storehouses for ground water. Due to high porosity and permeability of the sands, rainwater is stored in the form of lens-like bodies resting on salt water with a transition region of brackish water in between. Fresh water is thus available a few feet below the surface, and in the dry zone coastal areas could lead to severe salt intrusion if ground water is over exploited. About 12000 large diameter shallow wells are used in the dry zone for irrigation with a demand for 8000 more.

The North Western Province is an important example of an agricultural region, which exploited ground water by installing 130 tube wells, and finally suffered as a result of

intrusion of salt water in Puttalam, Mannar, Paranthan, Kilinochchi and Mulathivu. In 79% of the wells, run off of fertilizer and agrochemicals resulted in nitrate concentrations being well above levels advocated by the World Health Organisation (WHO) for safe drinking water, with recorded concentrations of over 200 mg/l. In the islands off the peninsula, 50% of the wells contained nitrates above 10 mg/l. Leaching of agrochemicals from intensively cultivated soil is responsible for elevated concentrations of chloride, nitrate and potassium observed in many irrigation wells in the Kalpitiya peninsula, with nitrate concentrations of up to 40 mg/l. In these agricultural areas, population density is high, and consequently bacterial pollution is common from pit latrine soak-ways. Soil, which is the most effective layer in protecting groundwater through absorption and biological degradation, is bypassed by pit latrines and increases the risk of contamination. Widespread water contamination in the peninsula results from agricultural washouts and pit latrine soak ways. In some areas in Point Pedro, nitrate concentrations ranged from 122 to 174 mg/l due to sewage pollution.

Pollution due to Urbanization and Industrial Effluents

Urbanization and industrialization cause water pollution due to discharge of waste water, sewage, solid waste etc into surface, groundwater and stagnant waters. The condition of the Kelani River and adjacent water bodies indicates the level of such pollution. The Colombo Urban Area (CUA) is bisected by the Kelani River with heaviest pollution in the western part and less pollution in the eastern and northern parts. All natural vegetation except for some small areas of tropical forest, mangrove and swamp vegetation have been destroyed by human activity. The Kelani River runs through densely populated areas and receives much organic pollution in the last 50 km stretch due to the discharge of untreated faucal matter. It was estimated that the river discharges 36 000 kg per day of COD compared to an estimated 6000 kg per day of COD discharged from the Mutwal outfall some 1500m from the shore. In addition, the concentration of total and faecal coliforms at the mouth of the Kelani is greater than in the seawater above the Mutwal outfall.

5. LEGAL AND INSTITUTIONAL MEASURES

Degradation of water resources has been recognized as a major environment and social issue. In order to achieve water conservation and for the protection of water quality, the following policy measures have been adopted:

1) The National Water Resources Council, supported by the Water Resources Secretariat, has been established to address all water related issues in a holistic manner. This Council will be a high level advisory body comprising government agencies and all stakeholders.
2) A Ministry for Water Resources has been established which will oversee the Water Resources Council, the National Water Resources Authority and the Water Resources Tribunal.
3) A Water Resources Law and a master plan for water use are being developed. A national water resources policy will be developed in order to make optimum use

of this resource and to resolve competing demands between irrigation and power generation.

4) Incentive schemes are being devised for water conservation.
5) Comprehensive development plans will be prepared for major river basins.
6) Water supply and sanitation programs will extend the coverage of safe drinking water and improved sanitation facilities.
7) Criteria will be established for assessment of ground water resources by establishing surface and ground water quality monitoring programs, and developing ambient water quality standards.
8) Management plans will be formulated for polluted water bodies.

Environmental Impact Assessments (EIA) and Environmental Protection Licence (EPL)

In accordance with the National Environmental Act all new industries, which fall into the category of "prescribed projects" are required to undergo the EIA process. Relevant standards for effluent discharge have been laid down in Gazette No 596/16 of 2nd February 1990. The CEA is responsible for the control of industrial pollution. Local and Provincial Authorities began issuing EPLs to small and medium scale enterprises from January 1994. An EPL is required for a 'prescribed' activity under Regulation 1159/22 of 22nd November 2000. General standards have been laid down for the discharge of effluents into inland surface waters.

6. CONCLUSION

The degradation of water source in Sri Lanka has been identified as a pressing environmental and social issue. The cause of the problem is the human impact on water supplies, which has been categorized into two areas. They are: the direct effects of human activity, for example damming, river diversion and connecting watersheds for the purposes of agriculture, industry or urbanization; and the indirect effects of human activity such as land clearance, deforestation, use of chemicals and dumping of sewerage and solid waste. At times both direct and indirect effects may be exerted on a resource which has in some cases resulted in demand exceeding supply. With the rapid growth of the population and urbanization, this problem could heighten in the near future.

The negative effects of the pressures on water resources have been clearly illustrated by the case study of the Kotmale Reservoir. It is undeniable that well-planned management of water resources is required to harmonize the multiple uses of aquatic resources and avoid possible conflicts in future. Sri Lanka's response to the problems identified has been largely a policy one implemented through an institutional framework. This includes among other things the establishment of the National Water Resources Council and the Ministry for Water Resources.

CHAPTER IX

SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: ATMOSPHERE

Key Issues: Air Quality; Air Contaminants; Industrial Pollution; Vehicular Pollution; Forest Fires; Indoor Pollution; Environment Education; Human Health; Fuel Quality.

Policy Framework: National Conservation Strategy 1988; National Environmental Action Plan 1994 amended in 1998.

Key Legislation: Motor Traffic Act No.14 of 1951; Petroleum Products Control Regulation Act No. 34 1979; National Environmental Act (NEA) 1980; National Environmental (Amendment) Act (NEA) 1988; Railways Ordinance 9 of 1902; Vehicles Ordinance 4 of 1916; Petroleum Ordinance 6 of 1887; Airports Authority 46 of 1979; Factories Ordinance 45 of 1942; Urban Development Authority Law 41 of 1978.

Key Institutions: Motor Traffic Department; CEA, NBRO, CMT, CPC and SLSI.

1. INTRODUCTION

Air pollution in Sri Lanka has become a startling problem, particularly around the metropolitan areas where it is caused by stationary or mobile emission sources which result from economic activities. Air pollution in the city of Colombo had been recognized as a growing problem since the early 1990s, and a Strategy and Action Plan – Clean Air 2000 was developed to address the problem as an activity of the Metropolitan Environment Improvement Program supported by the World Bank. However, the problem of air pollution in the Colombo area has grown considerably in magnitude. In January 2000 the Minister of Forestry and Environment put up a Cabinet Memorandum and gained acceptance for National Policy on Air Quality Management.

The implementing agencies and institutional framework for air quality management include the CEA, NBRO, CMT, Traffic Police, CISIR, Ministry of Finance, Ministry of Transport and Highways and UDA. The CEA has issued certain standards for ambient air quality and other institutions such as the Motor Traffic Department control aspects of air pollution such as vehicular emissions.

This chapter also includes a list and brief description of the legislation relevant to air quality management. The NEA, Sri Lanka's paramount environmental legislation is given specific attention however in the area of air quality management major conservation resources are at present focused around the Clean Air 2000 Action Plan.

2. INSTITUTIONS

The responsibility for air quality management lies with several cross cutting agencies such as the CEA, NBRO, CMT, CPC and SLSI. The CEA has issued an ambient air quality standard but not mobile emission standards (National Environmental (Ambient Air quality) Regulation 1996). Monitoring and regulation of motor vehicle emissions, which cause most of the air pollution, is the duty of the Motor Traffic Department under the Motor Traffic Act No.14 of 1951 as amended. Regulations for formulating standards for emissions from diesel vehicles have been gazetted under the Motor Traffic Act (Gazette No. 817/6 of 03/05/1994). The Ceylon Petroleum Corporation is accountable for the pollution potential of petroleum fuels (Petroleum Products Control Regulation Act No. 34 1979). Pollution emissions from thermal power generation come under the regulation of the Ceylon Electricity Board. National Clean Air 2000-Action Plan, which was approved by the Cabinet, lists the implementation agencies of air quality management and the institutional framework. These include CEA, NBRO, CMT, Traffic Police, CISIR, Ministry of Finance, Ministry of Transport and Highways and UDA.

3. EXISTING POLICIES, LAWS AND REGULATIONS

Sections 23(J) and (K) of the National Environmental Act (NEA) of 1980, which was amended in 1988, prohibit emission of pollutants into the atmosphere. Although discharge standards have been prescribed for liquid wastes and the Sri Lanka Standards Institution (SLSI) has prescribed emission standards for sulphuric acid plants, these regulations do not address vehicular air pollution. Though, the NEA has given the mandate to the CEA to regulate and control air pollution, little has been achieved in this area due to lack of appropriate regulations. Amendments to the Motor Traffic Act have given sufficient authority to the Department of Motor Traffic and the Police Department to control vehicular emissions. An increase in awareness has led to the recognition of the need for increased regulatory control and policy formulation including the formulation of the Clean Air 2000 Action Plan.

4. CLEAN AIR 2000 ACTION PLAN

The Clean Air 2000 Action Plan was designed to supplement the activities recommended by the National Environment Action Plan 1992-1995, in addressing the problem of air pollution. It covers recommendations for vehicle inspection and maintenance, fuel reformulation, monitoring of emissions, setting of standards, institutional strengthening, transport planning and traffic management and the use of economic instruments. The Plan was approved by the National Environmental Steering Committee, which appointed an Implementation Committee to monitor progress.

The Action Plan calls upon existing institutions dealing with urban air pollution control, to play various roles ranging from policy making to air quality monitoring, together with enforcing laws, ensuring regulatory compliance and undertaking research and development of technology for air pollution control. It allows the establishment of

functional linkages between many institutions dealing with environmental management. Actions proposed include the establishment of an institutional framework (among Ministry of Environment, CMT (Commissioner of Motor Traffic), CEA, Traffic Police, NBRO, CISIR, etc.) to manage air pollution in Sri Lanka.

So far implementation of the Clean Air 2000 program has been slow, but some positive developments include phasing out of unleaded petrol by year 2010 and the import of gas conversion kits that allow vehicles to use Liquid Petroleum Gas.

5. RELATED LEGISLATION

Motor Traffic Act, 14 of 1951 [Amendment- Motor Traffic Act, No.5 of 1998]
This deals with regulations that prohibit, restrict or control the use of motor vehicles.

National Environmental Act 47 of 1980, amended by Act 56 of 1988

Railways Ordinance, 9 of 1902
This prohibits smoking that constitutes an annoyance to any other person, passenger, or official.

Vehicles Ordinance, 4 of 1916
It gives the authority to the minister to make regulations for the purpose of carrying out the provisions of the ordinance, which includes the regulations for regulating the traffic on the roads and streets and for the safety and comfort of passengers and general public.

Petroleum Ordinance, 6 of 1887
This is for regulating the importation of dangerous petroleum and gives power to the Minister to make rules to regulate the importation of petroleum.

Petroleum products (Regulation and Control of Supplies) Act, 34 of 1979
This is for regulation and control of the distribution and use of petroleum products with a view to ensuring the fair distribution of such products and to provide for matters connected therewith or incidental thereto.

Airports Authority, 46 of 1979
The Minister is given the authority to issue directions in order to prevent or deal with noise or vibration pollution or other disturbances attributable to aircraft used for the purpose of civil aviation.

Factories Ordinance, 45 of 1942
Construction, extension or conversion of any factory building which effects any provision in the ordinance such as ventilation, has to be approved by Chief Inspecting Engineer or District Factory Inspecting Engineer and a panel of civil engineers nominated by the

Commissioner. It also gives provision to secure and maintain a reasonable temperature in workrooms using any method that prevents escape into the air of any fume likely to be injurious or offensive to persons employed in the workroom.

This ordinance also has regulations to secure and maintain adequate ventilation and render harmless so far as it is practicable, all fumes, dust and other particles injurious to health generated in the process of work. It also provides for precautions in confined places where dangerous fumes, toxic substances or deficiency of oxygen is likely to occur. Explosives or poisonous gases introduced to gas receivers need be allowed to escape outside the factory after they are rendered harmless.

Municipal Councils Ordinance 29 of 1947 (Revised in 1956) and Pradeshiya Sabhas Act 15 of 1987 (amended by Pradeshiya Sabhas Act 14 of 1999)
These also have regulations for prevention of pollution caused by factories.

Urban Development Authority Law, 41 of 1978
It gives power and functions to develop environmental standards and prepare schemes for environmental improvements in relevant areas.

National Industrial Pollution Management Policy Statement 1996
This has the provisions for pollution prevention at the source and treatment and proper disposal of industrial wastes, hazardous substances and sludges. It also provides for clustering of polluting industrial units and protects the environment by siting high polluting industries within industrial estates. The pollution is therefore localized and industrial estates will have common facilities for treatment and safe disposal of wastewater, solid waste and hazardous waste. Air pollution will be controlled at plant level.

Cabinet decisions (declared through a gazette notification on 20-12-94) for the Abatement of Emission of Ozone Depleting Substances
In order to phase out the usage of Ozone Depleting Substances (ODS), the Cabinet has announced the phase out dates of ODS (13 chlorofluorocarbons and 3 halons) for new appliances (i.e. 2000) and servicing existing equipment (i.e. 2005).

6. CONCLUSION

Atmospheric pollution in Sri Lanka has reached alarming levels. The response to the problem is briefly discussed in three areas: the existing laws; the existing institutional structure; and the Clean Air 2000 Action Plan. Essentially, despite the institutional and legislative framework having been developed the major laws and standards do not address vehicular air pollution. Furthermore, although the NEA has given the mandate to the CEA to regulate and control air pollution, little has been achieved in this area due to lack of appropriate regulations. Given this lack of progress the Clean Air 2000 Action Plan was formulated. Thus far it's implementation has seen limited results however some positive results have been witnesses such as developments in the phasing out of unleaded petrol by

year 2010 and the import of gas conversion kits that allow vehicles to use Liquid Petroleum Gas. A major feature of the Plan is that it facilitates functional linkages between the various bodies and ministries dealing with the environment. This is particularly important given the overlap of institutions in Sri Lanka's and counter-productive upshots of this.

The problem of air pollution is still rising however and it is clear that a committed and concerted approach must be employed. This could possibly be obtained through the National Policy on Air Quality Management which gained acceptance through a Cabinet Memorandum put up in January 2000 by the Minister of Forestry and Environment.

CHAPTER X

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 Conservation Strategy 1988; National Environmental Action Plan 1994 updated in 1998.

Key Legislation: Second Republican Constitution 1978; National Environment Act (No 47 of 1980); National Environmental (Protection and Quality) Regulation No.1 of 1990; Management of Hazardous Wastes 1996; Control of Pesticides Act No.33 of 1980; Cosmetics, Devices and Drugs Act. No.27 of 1980; Atomic Energy Authority Act No.19 of 1969; Marine Pollution Prevention Act No.59 of 1981; Explosives Act No. 21 of 1956 & No.33 of 1969; Laws Nos. 36 of 1976 & 14 of 1978; Food Act No.26 of 1980; Fertilizers Act No.21 of 1961; Consumer Protection Act Nos. 1 of 1979 & 37 of 1990; Poisons, Opium Act, Dangerous Drugs Ordinance, Petroleum Ordinance No.6 of 1887; Motor Traffic Act No. 14 of 1951; Motor Traffic (Amendment) Act No.21 of 1981; Control of Pesticides Act No.33 of 1980; Malathion Control Act No.22 of 1985.

Key Institutions: Central Environmental Authority (1981); Ministry of Environment and Natural Resources; Department and Mahaweli Authority; Sri Lanka Standards Institute.

1. INTRODUCTION

Waste can be classified as solid waste and liquid waste, which includes hazardous and non hazardous waste. Waste Management is a major environmental problem in Sri Lanka and hazardous waste management has become a pressing environmental and health issue. There is ample evidence that the improper disposal of hazardous waste can cause serious damages to human health and the environment.

According to a study undertaken by the Ministry of Policy Planning it has been availed that nearly 40 000 Mt. of hazardous waste is produced in Sri Lanka per annum however this does not include waste generated from hospitals which amounts to another 6600 tons per annum.

Solid waste is described as non-liquid waste material arising from domestic, trade, commercial, industrial and agricultural activities as well as waste arising from public

sectors. Solid waste is comprised of various different materials such as food waste and packaging in the form of paper, metals, plastic or glass, etc. Solid waste is a growing problem in Sri Lanka aggravated in the absence of a proper management system. Development and implementation of a National Strategy for solid waste management is essential to reduce environmental, social and economic problems associated with the present methods of disposal. This chapter outlines such a strategy; the National Waste Management Strategy. The Strategy details initiatives such as re-use of waste, recycling, composting, sanitary land filling, incineration, energy recovery, bio-gas production and sorting of waste at source. Recent analysis of date pertinent to solid waste reveals that the real problems lie to a great extent with present haphazard disposal practices rather than with the rate of generation. However, the rate of generation of solid waste is also increasing with the increase of population, technological development and changes in the lifestyles of the Sri Lankan people.

The legislative response to Sri Lanka's waste problem is provided by Acts such as the National Environment Act 1980, the Import and Export Act 1969 and the Customs Ordinance. Each of these statutes is discussed in the following pages, along with regulations that have been published in the Gazette. The Basel Convention, a major catalyst in the development of a response the problem of waste in Sri Lanka, is also given appropriate attention in this chapter.

Possible future trends and emerging issues are discussed in relation to waste management. Issues such as community participation, private sector participation and the need for multi-sectoral partnerships are included.

The latter part of this chapter deals with a more specific problem of pesticides and throughout the chapter the adequacy of the legislative and institutional responses to the problems associated with chemicals and waste is questioned.

2. NATIONAL WASTE MANAGEMENT STRATEGY

The National Waste Management Strategy should be involved with waste avoidance, reduction, reuse and recycling and final disposal in an environmentally sound manner. Generation of waste in the process of production and consumption is inevitable. However, the national policies are aimed at reducing waste by targeting producers and consumers through education and awareness creation. The present rate of waste generation can be reduced to a considerable extent simply by good house keeping practices.

Excessive packaging causes rapid increase in the generation of solid waste. Generation of such waste can be reduced to a considerable extent by reducing the demand for such packaging. Consumers should consider their own disposal problems at the source and acknowledge the problems associated with the final disposal. Consumers should also be encouraged to use biodegradable packaging materials wherever possible. Manufacturers

should be encouraged to reduce unnecessary packaging to facilitate environmental friendly disposal systems, which in turn will reduce their production costs.

Solid waste generation in urban centers presently remains at a very high level due to unsuitable transportation, handling and storage of fruits and vegetables and other perishables. A considerable amount of these perishables become waste at market places due to inadequate handling of these items and current packaging systems. A post harvesting marketing chain should be developed with appropriate technology to avoid or minimize the generation of such waste.

The strategy should also look into the possibility of reducing the generation of plastic waste mainly in the packaging sector. Plastics are non-biodegradable and remain in the environment indefinitely as waste. Haphazard disposal of polyethylene and plastic waste has become serious environmental and health problem at present in Sri Lanka. In the absence of well-established plastic waste recycling facilities, these problems will be increased in the future and therefore use of plastics should be discouraged as much as possible in favour of paper, glass, cloth and other biodegradable materials.

Plastic offers a unique advantage in packaging of certain products and it will be virtually impossible to eliminate its use. In such circumstances, use of degradable plastics should be encouraged in place of non-degradable plastics. Degradable plastics are currently more expensive than non-degradable plastics and therefore unable to compete. However, if life cycle costs are used in the comparison, an appropriate incentive regime can be developed.

Priority should be given to production of long-life products and multi-use packing rather than disposable packaging. Waste avoidance also occurs when households contribute to waste avoidance by composting organic waste. Manufacturers can also reduce waste by creating closed life-cycle processes such as reuse of residual material in the production process.

Re-use of waste

Reuse of waste helps waste reduction. A product becomes a waste when it is not used any longer. Therefore, consumers should be encouraged to reuse the products for some other purpose, if it is possible to do so in an environmentally sound manner.

Recycling of waste

Recycling of waste also helps to reduce and reuse the amount of waste considerably, making final disposal more manageable. Sustainable waste collection systems should be established in order to make final disposal manageable. Similarly sustainable waste collection systems should be established in order to make recycling economically viable.

Recycling of organic waste by composting

Analysis of data in Sri Lanka reveals that most of the solid wasted contain biodegradable waste suitable for composting. The high moisture content of the waste in Sri Lanka makes composting possible thus it is an option which should be given serious attention by Local Authorities. In lieu of the high prices of the chemical fertilizer and also the health problems associated with overuse of chemical fertilizer aimed at increasing the harvest, farmers should be encouraged to use compost produced by organic waste as a soil conditioner. However it should be noted that the quality of the compost will depend mostly on the degree of contamination and type of the organic waste. Plants and animals have a tendency to bio-magnify heavy metals in their respective systems, which is a significant risk to food chain crops. Therefore, Sri Lanka has heavy metal standards of compost. Segregation of waste at the source plays an important role in obtaining a better quality of compost.

In order to increase the market for composting, arrangements should be made through the proper authorities to encourage agricultural sector to use compost as a soil conditioner.

Recycling of glass waste

At present Ceylon Glass Company (CGC) uses 40% of cuet (waste glass) in its process of production. The Company has facilities to go up to 60% if waste glass is available. Use of broken glass helps CGC to reduce the production cost as waste glass requires lower temperatures in its production process. This will in turn increase the lifetime of equipment. The amount of raw materials required for glass production will also be reduced, thus facilitating the saving of natural resources.

Recycling of waste paper

Technology currently exists in Sri Lanka for the use of waste paper in the process of paper production. Additionally equipment is available in the world market to use various types (grades) of waste paper for this purpose. Hence policies should be developed to encourage use of waste paper in the process of paper production.

Sanitary land filling

A sanitary landfill site is a site designed for the final disposal of waste in an environmentally sound manner. There is a clear distinction between open dumping, a common disposal practice in Sri Lanka and a sanitary landfill site. Sanitary landfill sites are designed to minimize the adverse effects associated with solid waste disposal. The design includes containments of leachate and gas, daily cover for the working surface, runoff and run on diversions which result in decreasing the potential of surface and ground water pollution. A sanitary landfill site is also aesthetically more acceptable. At present solid waste disposal sites are often located in low-lying areas creating a tendency of surface and ground water pollution. Therefore, potential solid waste disposal sites should be identified on country wide basis and the necessary clearances obtained after going through Initial Environmental Examination (lEE) or Environmental Impact

Assessment (EIA) studies as required by law to prevent ground, water and air pollution. The present haphazard practices of dumping waste should be prohibited and either sanitary land filling or engineered controlled land filling should be implemented based on the guidelines provided by the Central Environmental Authority.

Incineration

Incineration can be defined as a controlled combustion process for burning solid, liquid and gaseous combustible wastes to gases and residue containing non-combustible material. During combustion, moisture is vaporized and oxidized. Carbon Dioxide, water vapour, ash and non-combustibles are the end products. Incineration without an adequate control system leads to the release of gases which may cause air pollution. In the case of municipal waste, incineration is not economically viable in Sri Lanka due to high moisture content and the low calorific value of the waste.

However, in the case of clinical waste disposal by incineration in an environmentally sound manner has become an efficient strategy considering the hazardous nature of the waste and the difficulties in establishing landfill sites especially for the disposal of such waste. It should be noted however, that landfill facilities are needed for the disposal of residues of incineration. Therefore more emphasis should be placed on managing clinical wastes, training and capacity building and waste minimization. On set back is that Sri Lanka as a developing country lacks the capacity to either monitor or regulate air emissions (such as dioxins and furons) throughout the country, which would be produced during incineration. Disinfection or neutralization techniques can be used for most of the clinical waste which facilitates the use of low cost disposal technologies.

Energy Recovery

After removal of the recyclable components there may be a considerable amount of garbage left behind which could be utilized for the generation of electrical and thermal energy. Since the waste is largely organic, and everything that is organic can not be composted in a reasonable period of time, large volumes of organic waste will continue to be deposited in landfills. The utilization of combustible materials for energy recovery would be a better option than land filling if economically feasible. A large sanitary landfill has the potential for recovery of gas as a source of energy. Incentives should be given to develop infrastructure facilities for landfill gas recovery.

Bio Gas Production

Highly organic waste has a potential to produce bio-gas (a source of energy) while producing compost after digestion in an anaerobic condition. Therefore, utilization of bio-gas technology can also be considered as a strategy for the disposal of highly organic waste.

Sorting of waste at the source

Sorting of waste at its source is an important activity which should be encouraged through education and awareness programs. Sorting of waste at its source makes recycling economically viable to a considerable extent. Infrastructure facilities should be established to motivate sorting of waste, which in turn would facilitate establishment of formal and informal waste collection systems. This will also help to create job opportunities. Policies should be developed to enhance the market for recyclable products.

3. LEGISLATIVE AND INSTITUTIONAL ARRANGEMENT FOR HAZARDOUS WASTE MANAGEMENT

The National Environmental Act defines hazardous waste as 'those materials, substances and waste which have toxic, corrosive, radioactive, chemically reactive, flammable or explosive characteristics and which are listed by the Agency by Gazette notification from time to time.'

On the eve of a fresh millennium Sri Lanka aims to strive towards economic development through rapid industrialization. As such, it is inevitable that these industries will generate hazardous waste, which would essentially require responsible handling. The potential difficulties that may be faced in the near future regarding hazardous waste could be enormous.

According to a study undertaken by the Ministry of Policy and Planning, it has been revealed that nearly 40 000 MT of hazardous waste is produced in Sri Lanka per annum. However, this does not include waste generated from hospitals. ERM has estimated the total waste generated from hospitals to be 6600 tons per annum, (although the hazardous component would be only a fraction, if carefully handled and segregated at the source.)

LEGISLATION AND REGULATIONS

National legislation concerning the management of hazardous wastes has been in force since June 1, 1996. However, these regulations have hardly been enforced. The Government of Sri Lanka published the regulations concerning hazardous wastes in the Gazette Extraordinary No. 924/13 of May 23, 1996. This came as an amendment to the National Environmental (Protection and Quality) Regulation No.1 of 1990, published in Gazette Extraordinary No. 595/16 of February 2, 1990.

In the new amendment, EPL regulations have been re-designated. The new Part II deals with hazardous waste management. This sets out requirements to obtain a licence from the CEA and specifies the procedures for obtaining such licences and conditions attached to them. Schedule I of Part II lists out 19 constituents and 9 waste streams indicating what should be considered hazardous waste.

Apart from the aforementioned regulations, there are other controls of certain hazardous waste components, from different angles and standpoints. For instance, the following acts have certain relevant provisions for hazardous material:

Import and Export Act No.1 of 1969

This Act has introduced a Special Import Licence (SIL) scheme relating to security, health, environment and public morals. Those who intend to import any item under SIL are required to apply to the Controller for a licence. The Controller may then impose various conditions (e.g. Obtaining a certificate from Registrar of Pesticides) before exercising his/her discretion in favour of the importer.

Customs Ordinance (Chapter 235)

Schedule B of the Customs Ordinance enumerates a table of prohibitions and restrictions for import and export. Sections 12(1), 43 and 44 of the Ordinance describe the laws with respect to import and export of goods in Schedule B and the power to amend the Schedule and regulate the conditions of import and export.

National Environmental Act (NEA)

Under s 12 of the NEA the Central Environmental Authority with the concurrence of the Minister may from time to time give to any local authority in writing such directions (whether special or general) to do or cause to be done any act or thing which the Authority deems necessary for safeguarding and protecting the environment within the local limits of such authority.

Every local authority to which a direction has been given under subsection (I) shall comply with such direction.

Second Republican Constitution (1978)

Sri Lanka was known for centuries as a land proud and protective of its flourishing natural riches. This traditional respect of Sri Lankans for the preservation of the environment was distinctively depicted in the Second Republican Constitution (1978), which carried the following clauses for safeguarding the environment:

1. "The State shall protect, preserve and improve the environment for the benefit of the community." (Article 27.14)
2. "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 ...to protect nature and conserve its riches." (Article 28.f)

This pledge was formally institutionalized with the National Environment Act (No 47 of 1980)), which was the foundation for the setting up of the Central Environmental

Authority (1981) as the premier state agency responsible for the formulation and implementation of policies and strategies for the protection and management of the environment in Sri Lanka.

After recognizing that the CEA lacked regulatory powers to act on environmental pollution, the NEA was amended in 1988 empowering the CEA to regulate emissions and effluent discharges.

It is the mandate of the Ministry of Forestry and Environment to provide leadership for formulating National Environmental Policies and to review them.

Provisions of the Local Government Law

The legal framework required for solid waste management is adequately provided under Local Government Acts, and the Local Authorities are responsible for the collection and disposal of solid waste. s 129,130 and 131 of the Municipal Council Ordinance, and s 93 and 94 of the Pradeshiya Sabha Act, have clearly and adequately provided for the management and disposal of solid waste in the respective areas.

The provisions relating to Solid Waste Management in Pradeshiya Sabbas Act and the Urban Council Ordinance and Municipal Council Ordinance are as follows:

(a) All street refuse, house refuse, night-soil or other similar matter collected by Local Authorities under the provisions of this part shall be the property of the Council and the Council shall have full power to sell or dispose of all such matter .

(b) Every Pradeshiya Sabha, Urban Council and Municipal Council shall from time to time provide a place convenient for the proper disposal of all street refuse, house refuse, night-soil and similar matter retrieved in accordance with the provisions of the law, and for keeping all vehicles, animals, implements, and other things required for that the purpose and shall take all such measures and precautions as may be necessary to ensure that no such refuse, night- soil or similar matter removed in accordance with the provisions of the law is disposed of in such a way as to cause a nuisance.

Other Relevant Legislation

1) Industrial Product Act No.18 of 1949 amended by Act No.53 of 956 & 69 of 1961.
2) Factories Ordinance.
3) Industrial Disputes Act No 43 of 1950 amended by Act No.25 of 1956 No.14 of1957, No 62 of 1957, No 04 of 1962, No.27 of 1966, No 39 of 1968, No.53 of 1973.
4) Industrial Promotion Act No.46 of 1990.

5) Pesticide Act No.33 of 1980.
6) Atomic Energy Authority Act No.19 of 1969.
7) Marine Pollution Prevention Act No 59 of 1981.
8) Food Act No 26 of 1980.
9) Fertilizers Act No 21 of 1961.
10) Regulation of Fertilizer Act No 68 of 1988.
11) Radioactive Minerals Act No 46 of 1968.
12) Consumer Protection Act No 46 of 1968.
13) Poisons, Opium and Dangerous Drugs (Amendment) Act No 13 of 1984 .
14) Petroleum Ordinance No 6 of 1987, Local Authority Petroleum Products (Regulation and Control of Supplies) Act No.34 of 1979.
15) Motor Traffic Act No 14 of 1951 amended by Motor traffic Act No 21 of 1981.

INSTITUTIONS

Principal Implementing Bodies with regard to Hazardous Waste Management

- Central Environmental Authority.
- Ministry of Forestry and Environment.
- Local Authorities.

4. RELATED CONVENTIONS

Basal Convention on the Control of Trans-boundary Movement of Hazardous Waste and Their Disposal

In the past, hazardous waste has not received much attention from policy planners. However, Sri Lanka ratified the Basel Convention with effect from August 28, 1992. Since then, significant attention has been drawn towards the movement of hazardous waste from outside sources into Sri Lanka. The Ministry of Forestry and Environment serves as the focal point for the Convention. In the new NEA, provisions have been made for the Ministry to give effect to the principles under Basal Convention.

The Government of Sri Lanka has made a policy decision to locate high polluting industries wherever possible within industrial estates provided with effluent disposal facilities. The National Environment Action Plan prepared by the Ministry of Forestry and Environment lists out relevant issues and recommendations for the Industry Sector.

Guidelines for the implementation of hazardous waste management regulation have been prepared by the CEA, under the guidance of the Ministry of Forestry and Environment. These include:

(a) Guidelines on safety measures to be adopted during generation, collection, transportation, storage, recovery, recycling and disposal of wastes;
(b) Guidelines for the establishment of waste disposal sites; and
(c) Operation regarding recycling and recovery of waste.

A pre-feasibility study on the management of hazardous waste has been completed with the financial assistance of the World Bank. Hazardous Waste Disposal Facilities will be established based on the study.

A program for disposal of clinical waste in some selected hospitals in the Colombo Region is presently underway. The Ministry of Health intends to prepare an Action Plan island-wide for the management of clinical waste. The Western Provincial Council has made arrangements to establish a Waste Management Authority and a draft Act is being developed for this purpose. The Ministry of Provincial Councils and Local Government also plans to establish a Waste Management Authority at National Level. Some fiscal incentives are being given to industries under certain conditions to use advanced technology in order to minimize and control pollution.

5. ADEQUACY OF LEGISLATIVE AND INSTITUTIONAL ARRANGEMENT FOR HAZARDOUS WASTE

Though National Legislation concerning the management of hazardous wastes has been in force since June 1 1996, these regulations have hardly been enforced. The mere enactment of legislation has continually been proved to be highly insufficient without including the support services.

The absence of proper disposal facilities and lack of sound disposal practices by the generators have led to a myriad of problems in the country. Ignorance about the nature and significance of hazardous wastes is a major constraint. Therefore, awareness among generators and users is essential in order to minimize hazards. The industrialists should understand that the improvement of efficiency will not only minimize waste, but will also result in more profits and increased economic viability.

The local authorities should pay increased attention to hazardous waste disposal practices. For instance, clinical waste though collected separately, is often mixed with other waste when disposed. Awareness on the part of generators and collectors of what wastes are hazardous is a major problem.

Another major constraint is that the landfill sites offered usually only take non-toxic, non- hazardous, organic and biodegradable solid waste. There is serious deficiency in providing suitable disposal sites for hazardous waste.

The services provided by universities and research organizations such as Industrial Technology Institute towards the control of industrial pollution are significantly low. Though a considerable number of instruments are available in various laboratories for testing and analyzing hazardous waste, they are not being utilized properly due to various reasons.

Suggestions for strengthening the legal and institutional regime to make Hazardous Waste Management more effective include:

- Legislation, implementation and enforcement facilities, infrastructure and support services should essentially be in place for the effective management of hazardous waste.
- The existing legislation should be amended and a separate authority should be appointed specifically for hazardous waste management.
- Hazardous waste disposal facilities along with treatment facilities should be provided in suitable sites.
- The generators and users of hazardous waste should be educated about the nature and significance of hazardous waste.
- Industrialists should be encouraged to adopt the available waste management principles such as Total Environment Quality Management and ISO 14000 standards, Clean Technology Options, Waste management Principles etc.
- Industrialists, along with local authorities should work more closely together, towards safe disposal of hazardous wastes

6. EMERGING ISSUES AND TRENDS INCLUDING POSSIBLE AREAS OF FURTHER REGULATIONS

As previously suggested a shocking absence of proper disposal methods has resulted in a myriad of problems for Sri Lanka. Ignorance is a major factor and research and education of the benefits of safe disposal methods, discussed earlier should be undergone, targeting both domestic and commercial generators and industrialists. Landfill sites have also found to be largely inadequate often only accounting for non-toxic wastes.

Due to such problems with implementation and institutional responses new trends should also be explored. Four such possibilities are discussed below.

Private Sector Participation

Private sector partnership in solid waste management is an essential component to be encouraged. The existing recycling industries should be encouraged to participate more in the development of infrastructure facilities in collection and transportation of waste. Recycling of glass, metal, paper etc. needs to be encouraged with a viable small and medium scale industrial promotion strategy with adequate protection. Establishment of recycling plants at provincial/regional level can be promoted through such an attractive financial and technical support package. Such an environment would be a precondition for any meaningful participation of private sector in waste collection and disposal.

Private sector participation on composting of organic waste should also be encouraged by providing more infrastructure facilities in collection and transportation of waste. A proper

market could also be established by encouraging farmers to use compost as a soil conditioner. Policies should be developed to encourage private sector involvement in recycling of waste considering waste as are resource.

Community Participation

Cooperation and participation of the community in solid waste management is essential in implementing any solid waste management strategy. Solid waste is generated by each and every individual. On the other hand the public displays strong emotions to the environment and to the mismanagement of solid waste. In general, the public looks at solid waste management as a function of Local Authorities without considering the importance of the role they can play to ensure solid waste management in an environmentally sound manner and the benefits they can obtain such as reduced health costs. Reduction, reuse and recycling of waste can not be performed without active participation of the community. As indicated earlier, sorting of waste at source plays an important role to get private sector partnership in solid waste management especially in the recycling industry. Therefore, community participation should be encouraged through education and awareness creation wherever possible. Community involvement in the decision-making processes developing solid waste management strategies should also be encouraged to increase the likelihood of the success of the programs. The positive cooperation of the community in solid waste management will help the community itself to live in a healthy environment, which is the most important factor in community life.

Role of the Government

It is essential that government take the initiative to provide infrastructure facilities to establish a proper waste collection and transportation system of solid waste to reduce haphazard disposal practices and to ensure disposal of waste in an environmentally sound manner. This will enable the recycling industry to make their production processes economically viable. A system of user fees should be introduced to cover the operations in an appropriate manner. In the absence of private sector partnerships at the initial stage in solid waste management due to inadequate infrastructure facilities, the Government has to provide initial investment to establish soil waste management practices. The Government can thereafter gradually reduce the cost of investment to a certain thresh hold limit while encouraging sustainable private sector involvement. National policies should be developed to facilitate the implementation of the National Solid Waste Management Strategy. It is important that suitable regulatory controls are also evolved in order to implement these policies properly.

Need for multi-sectoral partnerships and interactions in solid waste management

Solid waste management should not be a responsibility of the Local Authorities alone. It is the responsibility and obligation of all sectors including the Government, general public, private sector and community groups at various stages. The facilities and

incentives available for industrial development should also be granted to Local Authorities in developing and implementing solid waste management strategies. The cooperation of all sectors in solid waste management shall be obtained by promoting the undeniable benefits using education and awareness creation island wide.

7. CONTROL OF PESTICIDES

The rapid growth of world's population has resulted in the expansion of agricultural land, the world over, in order to meet the ever-increasing demand for food products. One of the major challenges in these intensified agricultural activities is the elimination of harmful pests and pathogens. In view of this, the large-scale use of pesticides has become an unavoidable fact in both the developed and developing world.

What are broadly referred to as pesticides consist of a wide range of chemicals including insecticides, fungicides, rodenticides, plant growth regulators and supplementary agents.

Although some pesticides are extracted from natural materials, a large array of synthesized chemicals have come into wide use during the recent past, which have in turn become major pollutants of inland and marine waters and agricultural soils leading to serious environmental and health hazards. Pesticides are predominantly toxic chemicals. The misuse of such agrochemicals, especially in excess, has made the environment extremely vulnerable particularly in the developing countries such as Sri Lanka. Therefore the government regulatory agencies have drawn increased attention towards the import, storage and use of pesticides.

8. LEGISLATIVE AND INSTITUTIONAL ARRANGEMNETS FOR PESTICIDE CONTROL

Sri Lanka as well as many other countries often has more than one organization looking into pesticide control from different angles and viewpoints.

INSTITUTIONS

The responsibilities of different institutions in Sri Lanka are listed below.

Ministries in charge of Agriculture, Lands and Fisheries:

- Testing new pesticides for effectiveness and safety.
- Regulating the safe use of agricultural chemical.
- Registering new pesticides.
- Monitoring the safe use of agricultural chemicals.

The Central Environmental Authority

- Regulation of pesticide residues in the environment.
- Establishment of the particle residue limits of pesticides in crops.
- Establishment of the analytical method for pesticides in crops and environmental samples.
- Monitoring of pesticide and pollutants in crops and environmental samples.

The Ministry of Social Welfare

- Safety evaluation of the toxicities of pesticides and pollutants
- Establishment of the tolerances and the maximum residue limits of pesticides in crops
- Establishment of the analytical method for pesticides in crops and environmental samples
- Monitoring of pesticides and pollutants in crops and environmental samples

LEGISLATION

A number of laws have been enacted to control the formulation and use of pesticides in order to prevent potential hazards. The magnitude of harmful effects of pesticides is often immeasurable.

a) Control of Pesticides Act, No.33 of 1980
b) Malathion Control Act, No.22 of 1985
c) Coconut Research Ordinance
d) Rubber Research Ordinance
e) Customs Ordinance

Control of Pesticides Act, No.33 of 1980

This act is defined as "an act to provide for the licensing of pesticides to regulate import, packing, labeling, storage, formulation, transport, sale and use of thereof; for the appointment of a licensing authority for pesticides; for the establishment of a pesticide formulary committee and for matters connected therewith or incidental thereto".

Accordingly the licensing authority for pesticides is the Registrar of Pesticides who is responsible to the Director of Agriculture.

The Pesticide Formulary Committee consists of the Director of Agriculture, Registrar of Pesticides and no less than 8 persons experienced in the use and control of pesticides as appointed by the Minister.

Malathion Control Act, No.22 of 1985

This Act contains provisions to prohibit the possession, transport, sale and use of Malathion except by those persons duly authorized by the Director General of Health. According to the Act, the State is the sole authority for import of Malathion. However, guidelines are yet to be set for import, preparation and storage of Malathion.

Coconut Research Ordinance (Cap 440)

Last amended in 1984, this Act established the Coconut Research Board for the purpose of establishing and maintaining a Coconut Research Institute and for furthering scientific research in respect of coconut and problems concerning the industry, particularly the prevention and cure of pests and diseases. However, the manner in which the research should be carried out is not specified in the Ordinance. This should be given adequate attention to ensure that such activities do not harm the environment.

The same applies to the **Rubber Research Ordinance**, which established the Rubber Research Institute.

Customs Ordinance

The pesticides that are being used for agricultural purposes in Sri Lanka are mostly imported, either in the formulated form or as active ingredient form. The provisions under the Customs Ordinance enable the Director General of Customs to appoint warehouses for goods. However, there should be guidelines for the selection of warehouses depending on the chemical properties of the substance concerned. Forfeited goods that could pollute or adversely affect the environment when exposed should have safety measures for disposal.

Although there are no specific legislation under the name of Toxic Chemicals, they have automatically been included in the regulations relating to Hazardous Waste and Pesticides. Therefore, the same legal arrangements apply to toxic chemicals.

9. ADEQUACIES OF LEGISLATIVE AND INSTITUTIONAL ARRANGEMNETS FOR PESTICIDE CONTROL

Inadequacies of provisions pertaining to spillage of pesticide formulations, disposal of pesticide waste, unsafe disposal of empty pesticide containers and storage of pesticide in bulk have been identified in the Pesticide Control Act.

Guidelines for the selection of site for manufacturing and storage have to be formulated especially to prevent accidental pollution of the environment. The selected site should be away from residential areas and located at specified distances, away from water sources, taking into mind the height above sea level, rate of seepage etc. The exposure of empty pesticide drums to atmosphere and weather is a huge threat to human life. Use of pesticides in places close to streams and other inland water bodies should be

regulated, and the CEA and other environmental authorities should be given the responsibility to monitor whether any given area is free of pesticide residues. With regard to the Rubber Research Ordinance and the Coconut Research Ordinance, the manner in which the research should be carried out is not specified. This should be given adequate attention to ensure that such activities do not harm the environment.

In the Customs Ordinance there should be guidelines for the selection of warehouses depending on the chemical properties of the substance concerned. Forfeited goods that could pollute or adversely affect the environment when exposed should have safety measures for disposal.

10. CONCLUSION

The problems associated with chemicals and waste in Sri Lanka are extensive and these problems are growing. The rapid increase in population, industrialization and the expansion of agricultural land in Sri Lanka is causing a rapid expansion in hazardous waste and the use of pesticides. These problems need addressing, as they are becoming a pressing environmental and health problem.

The National Waste Management Strategy is one demonstration of how Sri Lanka is responding to these problems. As outlined the national policies are aligned at reduction of waste by encouraging producers and consumers through education. Polices such as reuse and recycling and clean disposal of waste are encouraged. Legislative response includes Local Government Acts, provisions under the National Environmental Act and the Control of Pesticides Act. However, a lack of enforcement is prevalent. Also an absence of proper disposal facilities and lack of understanding of the problems involved with waste disposal and chemical use has led to a myriad of problems for the country.

Effective response to the problems associated with waste and chemicals would involve increased awareness among both generators and users, it would also involve creating suitable disposal sites for hazardous waste and an increase in services provided by universities and research organizations related to the control of industrial pollution. Providing effective solutions to the massive problems caused by industrial and chemical waste additionally necessitates multi-sectoral partnerships and cooperation.

CHAPTER XI

SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: FORESTRY

Key Issues: Key Issues: Forest Depletion; Forest Management; Wildlife Management; Livelihood of Local Peoples; Re-generation of Forests; Eco-development; Environment Education; Enforcement and Compliance.

Policy Framework: National Conservation Strategy 1988; National Environmental Action Plan 1994.

Key Legislation: National Environment Act 1980; National Environment (Amendment) Act 1988; Control of Pesticide Act 1980; Coast Conservation Act 1981; Coast Conservation (Amendment) Act 1988;Marine Pollution Prevention Act 1981; Fisheries and Aquatic Resources Act 1996; Forestry Ordinance, the Flora & Fauna Act, the Fisheries Act.

Key Institutions: Ministry of Environment and Natural Resources; Central Environmental Authority; Department and Mahaweli Authority; Department of Wildlife Conservation; Coastal Conservation Department; National Environmental Steering Committee; Metrological Department; Ministry of Agriculture, Lands and Forestry; Natural Resources, Energy and Science Authority; Ministry of Fisheries and Aquatic Resources;

1. INTRODUCTION

Forests are a complex collection of many resources such as physical (land), biological (flora and fauna), environmental (water, soil, wildlife, other bio-diversity and mitigation of atmospheric pollution etc.) and economic (provision of forest products for timber, fuel wood, medicines etc). The forestry sector is an important sector in Sri Lanka since it provides employment, timber for the wood industry and fuel for households. The sector and also plays an important role in preserving biodiversity as well as providing soil and water conservation. In 1998 the forestry sector contributed 2% to the GNP. However, this figure is much less than the real contribution due to the fact that national income calculation concentrate only on market-oriented activities and rarely accounts for those properly due to a of lack of statistics.

Deforestation has accelerated sharply with the increasing population over the last few decades. The rate of deforestation was 4200 ha/yr during the period between 1956-1981. Forest cover in 1994 was approximately 21-22% of the total land area while it was around 70% in 1900. However statistics show that since 1994 the total forest cover has been unchanged. Statistics also show an overall reduction in deforestation during the period from 1994 to 1998 even though there was a three-fold increase in deforestation from 1995 to1996.

The forestry sector has a complex role. It has to simultaneously conserve biodiversity, protect watersheds, while providing a multitude of forestry products to the increasing population. The Forestry and Land Use Administration has done a lot to manage the land and forests under its control. Protected Areas have been established, laws and regulations controlling the harvesting and transport of wood have been introduced to stop illegal logging, forest plantations have been created, and national tree plantation campaigns have been carried out. However, despite these positive developments, forest cover has continued to reduce. Unarguably the increasing population increases the demand for products of the forests, which increases the pressure on forestry lands. Ultimately the capacity of the forest to provide various amenities has been reduced, in many cases irreversibly.

Due to the scope and complexity of the problem, the time involved in changing people's values and perceptions and the special long-term nature of the forestry, it is apparent that all the problems cannot be solved quickly. In order to keep the remaining natural forests intact while supplying the increasing demand for forest product, a long-term planning is needed. It is in response to this need that the Forestry Sector Master Plan (FSMP) (based on the National Forestry Policy) was formulated with long-term objectives to conserve the forests, increase the productivity of forests, enhance the contribution of forestry to the welfare of rural population and to strengthen the national economy. This should be the foundation of forestry legislation and for developing supportive institutions.

2. ISSUES

The expanding population increases the demands and pressure on the forest resources. The major issues in the sector are related to these demands and pressures and include the industry of sawn-wood and other forest products, fuel wood, land for agriculture and livelihood and biodiversity.

Wood industry

Fairly rapid economic growth during the period of 1980s and early 1990s coupled with population increase has resulted in an increasing demand for sawn-wood, timber etc. It was predicted that in the 1990s industrial round-wood would become scarce unless sustainable wood production and utilization were increased. However, no such increase has been brought about and consequent to this the biggest challenge faced by the wood-based industry is the predictable shortage of wood. It has been predicted that the availability of sustainable wood resources will limit the production possibilities of the domestic sawmilling and plywood industries. This will result in loss of employment opportunities for thousands of people, increasingly high prices for wood-based forest products and the illegal logging that is an inevitable consequence of these high prices.

Fuel wood

Fuel wood is crucial for rural people who do not have access to other energy sources. Fuel wood is also the major energy source for many industries. Energy consumption continues to grow annually and the energy sector is dominated by fuel wood. The share of bio-energy, which is mainly fuel wood in total energy consumption in 1992, was about 66%. The Main issues are the increasing local imbalances between sustainable energy supply and demand, inefficient utilization of fuel wood and other bio-fuels, lack of alternative energy sources and slow adoption of new energy sources and an unsupportive institutional environment for responding to energy and fuel wood scarcity.

Land for agriculture and livelihood

Deforestation is closely linked with the population growth. Increasing population increases the demand for various forest products and land for livelihood and agriculture. Increase in population also increases the number of landless people and again increases the pressure on forestlands. Practically all the land available is already in use leaving natural forests as the main source of new land. Thus the challenge is to provide forest products and lands while keeping the natural forests intact.

Biodiversity

Sri Lanka is one of the smallest countries in the world but biologically is one of the most diverse. Its varied topography and tropical conditions have given rise to extremely high level of endemic biodiversity. Additionally, Sri Lanka has one of the most dense human populations in Asia hence much of its original forest has been cleared and the cover has decreased from 84% in 1881 to 22% in 1994. The impact of this on biodiversity is unknown known, but threats to the future survival of species will become greater as their habitats diminish. Thus the fundamental issues relate to preventing the present loss of biodiversity in terms of natural forest ecosystems and their constituent species and populations. Little knowledge is possessed on biodiversity, which inhibits the ability to plan accurately for its conservation and management.

Insufficient utilization of what information is available, unbalanced representation of biodiversity in the Protected Area Network, inefficient management and conservation of many Protected Areas and insufficient institutional and legislative provisions for conservation of biodiversity and Protected Area management has resulted in further losses in biodiversity and lost opportunities to benefit from its sustainable use.

Soil and water conservation

Forests play an important role in the conservation of soil and water resources. Natural forest vegetation protects the soil from erosion, increases infiltration, reduces runoff, stabilizes groundwater levels and stream flows and contributes significantly to recycling of rain water. Conservation of soil and water is extremely important given that the economy is heavily dependent on agriculture. Thus, the main issues related to soil and

water conservation are deforestation, land degradation, productivity decline, distortion in stream flow, loss of water and sedimentation of water bodies.

The long-term nature of the forestry sector requires long-term, comprehensive planning to respond to these issues. Overall, a long-term policy is required.

3. FOREST POLICIES

Policy statements have been made from time to time directing the forestry agencies, however until the FSMP was established in 1986 there had been no widely accepted, comprehensive forestry policy that could be supported by appropriate legislation and strategies. This section discusses the past forestry policies before detailing the National Forestry Policy.

Past policies

1929 saw the first step towards an explicit forestry policy. The objectives of the policy were to provide self-sufficiency in constructing timber and firewood, exporting timber and forest products, conserving water supplies, prevention of soil erosion and coordination of forestry operation to protect indigenous flora and fauna.

Some steps were taken to achieve these objectives. The process of mapping forest reserves was undertaken in 1931 and the concept of management by working plans was introduced into practical forest management. The statements were further clarified in 1938 with the decision that all forest areas above 5000 feet were to be regarded as protected resources.

Comprehensive policy objectives introduced in 1953

The policy objectives that are still valid for the most parts are:

(i) to maintain, conserve and create forests for the preservation and amelioration of the environment, soil and water resources and for the protection of the local fauna and flora when required for aesthetic, scientific, historical and socio-economic reasons;
(ii) to ensure and increase, as far as possible, the supplies of small wood for agricultural requirements and fuel wood for domestic consumption;
(iii) to maintain as far as possible, a sustained yield of timber and other forest produce for general housing, industrial, communication and defense requirements of the country; and
(iv) to work the forest to the highest possible economic advantage consistent with the foregoing objectives.

Following the above policy objectives, a large number of development activities covering conservation, industrial plantation establishment, establishment of plantations to protect

the environment, forest administration legislation, research and education were carried out by the Forest Department (FD) during the period of 1950-1970.

People's involvement emphasized in 1980

Until early 1980s, forestry was considered to be the responsibility of the state. The importance of the public involvement was recognized and in 1980 the following policy objective was introduced in addition to the objectives made in 1953.

"To involve rural communities in the development of private woodlots and forestry farms through a program of social forestry."

The development of the Community Forestry Project from 1982-1990, reflected this change in the government policy. However, people's involvement in forestry development was not effectively institutionalized.

Draft policy of 1991

The draft policy was established in 1991 by the FD based on the principles of conservation as set out in the World Conservation Strategy of 1980 prepared by International Union for Conservation of Nature and Natural Resources (IUCN). The National Forestry Policy approved in 1995 had its foundation in this draft policy of 1991.

National Forestry Policy

Review of past development trends in relation to policy objectives indicates that the sectoral performance has been unsatisfactory. The major indicators of unsatisfactory performance are reduced biodiversity and depleted sources of wood and other products due to deforestation, as well as reduced overall contribution of forestry to the national economy and limited involvement of the rural population in forestry development. The major reasons for unsatisfactory performances in brief are:

(i) the lack of a comprehensive national forestry policy;
(ii) inability to adequately address the root causes of problems;
(iii) the absence of the necessary will to implement the various policy statements;
(iv) the non-use of necessary policy instruments such as incentive schemes, credit lines and taxation;
(v) lack of general land use policy and coordinated planning in the natural resources sector;
(vi) outdated data;
(vii). unclear mandate of the government agencies and vague accountability for policy implementation; and
(viii) the recognition of the State as the sole manger for the sector .

These shortcomings justify the necessity of a comprehensive bio-physical, environmental, socio-political and economic projection of the forestry sector's optimal development, intended to guide decision making at national, regional and local levels. Thus FSMP was developed based on a new National Forestry Policy, to attain the optimal development of the resources. The major objectives of the policy were to

(i) Conserve forests for prosperity with particular regard to biodiversity, soils, water, and historical, cultural, religious and aesthetic values.
(ii) Increase the tree cover and productivity of the forests to meet the needs of present and future generations for forest products and services; and
(iii). Enhance the contribution of forestry to the welfare of the rural population, and strengthen the national economy, with special attention paid to equity in economic development.

With the above objectives, policies have been developed on management of State Forest resources, management of private forest and tree resources, wood and non-wood forest products, industries and marketing, institutional support for forestry development, inter-sectoral linkages and international forest-related conventions.

There legislation capable of adapting to policy reforms should be enacted to facilitate the implementation of the policies. The next section discusses the legislation in the forestry sector, its evolution, deficiencies and reforms that would support the National Forestry Policy.

4. LEGISLATION AND REGULATIONS

Until the FSMA was established laws have been formulated over the years to meet various situations and needs of the time. Most of the time they were based on rationales that were relevant to the past but have partly lost their significance and justification in the present environment. The FSMP realized the deficiencies suggested the reforms that could comprehend the long-term forestry policy objectives.

Evolution of the Legislation

Timber Ordinance 1822
Introduced by the British this law prohibited the cutting of timber on crown lands and jack trees in private lands without a license.

Wastelands Ordinance 1840
This was amended in 1979. The impact of the ordinance was to disentitle common property holders such as villages and families of their land and many *chena* holders.

Forest Ordinance No. 10 of 1885

This provided the declaration of reserved forests, but emphasis was on controlling the felling and transport of timber. Under this Ordinance two uninhabited forests were declared as sanctuaries for the protection of wildlife, namely Yala and Wilpattu.

Forest OrdinanceNo.16 of 1907
This is the cornerstone of the present law relating to forests and plant protection. Since its enactment, the Ordinance has been amended many times, but its original scheme and structure have remained unchanged.

5. OTHER LAWS AFFECTING FORESTRY

Land legislation

Three statutes, the Land Development Ordinance (LDO) 1935, the Crown Land Ordinance (CLO) No.8 1947, and the Land Settlement Ordinance (LSO) 1931 have implications for the allocation and management of forestland. The greatest impact comes from the allocation of land for settlement and development; these decisions are often made under the LDO or LSO. Land allocation decisions made without reference to the status of the forest often erode ecosystems irreversibly.

Fauna and Flora Protection Ordinance

The Ordinance, No.2 of 1937, and subsequent amendments most recently in 1993, make provisions for the protection of wildlife and flora in national reserves. The authority responsible for enforcing this law is the Department of Wildlife Conservation (DWLC).

Soil Conservation Act

Founded in 1951, the Act was amended in 1953 and 1981. This made provision for the conservation of soil resources, the prevention or mitigation of soil erosion, and the protection of lands by floods and drought. The Ministry responsible for agriculture administers the Act.

National Heritage and Wilderness Areas Act

This Act was passed in 1988. The Act aims at the protection of state lands having unique ecosystems, genetic resources, or outstanding natural features. The FD administers the Act.

6. INSTITUTIONAL STRUCTURE

The institutional structure of the sector and the relevant agencies should be arranged in such a way that it could facilitate the implementation of policies and the legislation. The

overview of the present institutional structure, its deficiencies and the new structure proposed by the FSMP are discussed in this section.

Present Institutional Structure (Ministry of Agriculture, Lands and Forestry)

The Minister, who is the political appointee, heads the Ministry. The main responsibility of the Secretary is to advice the Minister on policy formulation and implementation. Under the Secretary or Additional Secretary, there are several divisions, departments and agencies relevant to forestry.

(i) Planning Division

Responsible for ensuring that the plans produced in the ministry are in line with the national ministerial policies.

(ii) Forestry Planning Unit

Responsible for coordinating and implementing long-term sectoral planning and for coordinating and monitoring the implementation of sectoral development plans and the use of funds.

(iii) Forestry and Environment Division

Responsible for the regulatory activities, coordination all regulatory matters related to forestry and matters concerning the environment and conservation, and for reviewing legislation and regulations as well as drafting new regulations.

(iv) Land Use Policy Planning Division, Surveyor General Department, Land Commissioner's Department and land Reforms Commission

Responsible for land-use policy planning at national, provincial and district levels, land alienation and reforms, zoning and leasing.

Forest Department

The FD is responsible for managing the forest area under its jurisdiction, which includes production forests (both natural and plantation forests) and Protected Areas. The main mission of the FD is the production of wood on State lands and protection of forests. Recently, environmental conservation has emerged as one of its central functions. In addition the FD is also responsible for research and extension. The Conservator of Forests heads the FD. Under the Conservator there are three Additional Conservators responsible for research, operations and administration and personnel.

Operations

Operations at headquarters are grouped into six sections: silviculture, forest inventory and management, environmental management, extension and education, planning and monitoring and protection and legal enforcement. Most of the operations are carried out in the field through 18 Divisional Forest Officers (DFOs) in charge of 18 divisions, comprising of 68 ranges and 341 forest beats.

Forestry Research Division

This division is responsible for caring out research, obtaining and reviewing national and international research reports and disseminating research findings. The FD Library and the Forestry Information Service also function under this division

Personnel, Administration and Finance

This head is responsible for accounting, personnel records, supervision of financial activities of various projects and ensuring that all FD activities are in accordance with the government's administrative regulations.

Department of Wildlife Conservation (DWLC)

The Department is under the Ministry of Public Administration, Local Government, Plantation Industries and Parliamentary Affairs. The DWLC's main responsibility is the conservation of wildlife in the area under its jurisdiction. Under the Director and Additional Director there are five Deputy Directors for management, administration, field operations, research and training and promotions. Among these responsibilities the most important is field operations, which is responsible for the enforcement of the Fauna and Flora Ordinance, and for operation and management of National Parks, Strict Natural Reserves, Jungle Corridors and Sanctuaries.

State enterprises

There are two state enterprises:

- The State Timber Corporation

The STC is a government corporation responsible for procurement and sale of logs mainly from the state-owned forests, and for production and sale of sawn-wood and furniture. In addition the STC is responsible also for importing timber, forestation, forest management and agricultural production.

- The National Paper Company

The NPC is also a government-owned limited liability company producing pulp and paper, The mills do not use wood as raw material, except in very small quantities.

Other ministries and government bodies related to forestry

This category consists of the Ministry of Transport, Highways, Environment and Women's Affairs and its Central Environmental Authority, Universities and the Wildlife Trust. Each Ministry is responsible for the development of environmental policy and

legislation and for the enforcement of the legislation, including monitoring of environmental regulations and coordinating Environmental Impact Assessments.

Non-state sector

The non-state sector of forestry includes farmers and other small-scale tree growers, estates and forest industries. Farmers and small-scale tree growers play a key role in the forestry sector because they are the most important producers of timber and bio energy, as well as consumers of various forest products and services. Estates also play an important role in the forestry sector. Rubber estates are a major source of timber and fuel wood. Alternately the tea industry is the major consumer of fuel wood. In addition tea estates have fuel wood and large areas for tree growing. Finally forest industries are important in the sector because small and medium-scale producers process most of the timber and private saw-millers and pit-sawyers are the main consumers of fuel wood.

Non-governmental and community based organizations

More than 200 NGOs deal with forestry either directly or indirectly. These NGOs represent a valuable resource that should be tapped to develop forestry and conserve the environment.

7. CONCLUSION

What has been demonstrated is that the forestry sector is complex and the issues involved varied and conflicting. The forestry sector is important in Sri Lanka since it provides employment, supports industry and provides fuel. However, it also has to conserve biodiversity and protect watersheds, while providing a multitude of forestry products to the increasing population.

To balance these issues the forestry and land use administration established ‘protected areas’, laws and regulations controlling the harvesting and transport of wood were introduced, forest plantations were created and national tree plantation campaigns carried out. However, despite these positive developments deforestation has continued to grow. This is partially due to an increase in population placing increasing pressure upon forestry resources. Although, the lack of a comprehensive national policy and the inability to adequately address the root causes of problems necessitated the development of a long-term plan. The Forestry Sector Master Plan (FSMP) (based on the National Forestry Policy) was thus formulated with long-term objectives to conserve the forests, increase the productivity of forests, enhance the contribution of forestry to the welfare of rural population and to strengthen the national economy. This should be the foundation of future forestry legislation and for developing supportive institutions.

CHAPTER XII

SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: BIODIVERSITY

Key Issues: Loss of Biodiversity; Protection of Endangered Species; Forest Degradation; Land Degradation; Environment Education; Capacity Building; Enforcement and Compliance; Ecosystem Development; Public Participation.

Policy Framework: National Conservation Strategy 1988; National Environment Acton Plan; Forestry Sector Master Plan; National Coastal Zone Management Plan 2000.

Key Legislation: Ordinance to Provide for the Protection of Fauna and Flora of Sri Lanka 1937 and its Amendments of 1942, 1944, 1945, 1949, 1964 and 1970; Forest ordinance of 1907 and its Amendments up to 1979.

Key Institutions: Central Environmental Authority (CEA); Department of Wildlife and Conservation; Department of Forests; Ministry of Agriculture, Lands and Forestry; Forest Department; State Timber Corporation; Ministry of Land; Mahaweli Authority of Sri Lanka; Land Use Policy Planning Unit of the Irrigation Dept in the Ministry of Land Use Unit; National Aquatic Resource Agency (NARA); National Mangrove Committee; National Committee for Land Degradation and Desertification in the Ministry of Environment and Natural Resources; Biodiversity Secretariat of the Ministry of Environment and Natural Resources; Water Resources Council; Water Resources Secretariat.

1. INTRODUCTION

Due to its location and topography Sri Lanka is one of the smallest but biologically most diverse countries in Asia. Consequently it is recognized as a biodiversity hotspot of global importance. Among the terrestrial ecosystems are forests varying from wet evergreen forests to dry thorn forests, grasslands, wetlands, freshwater bodies and a complex network of rivers. These together with the coastal and marine ecosystems such as sea grass beds, coral reefs, estuaries and lagoons, and associated mangrove swamps constitute the diverse and complex network of ecosystems of Sri Lanka.

In addition, there are numerous man-made ecosystems related to agriculture and irrigation, which have a direct bearing on the conservation, sustenance and survival of biological resources. Sri Lanka's high population density, high level of poverty, and wide spread dependence on subsistent agriculture are exerting considerable pressure on the biodiversity of the country. Extensive land degradation and deforestation and the unregulated exploitation of natural resources (e.g. mining for coral lime, sand and gemstones) are some of Sri Lanka's most pressing problems. In response, the National

Conservation Strategy, the National Environmental Action Plan, the Forestry Sector Master Plan, the National Coastal Zone Management Plan 2000 are some of the policy instruments that are addressing biodiversity conservation. There are also many Government Institutions whose responsibility is to translate these policy initiatives into action. However, despite the legal, policy and institutional support for its conservation, the country's biodiversity is continuing to diminish. The growth and movement of population, the opening of economic markets and new trends in industrial development are expected to have a growing adverse impact on biodiversity unless some systematic and stringent corrective measures are taken. Sri Lanka ratified the Convention on Biodiversity in 1994 and as a response to Article 6 of the Convention; the preparation of "Biodiversity Conservation in Sri Lanka-A Framework for Action" began in early 1996. This plan proposes a course of action to ensure that the biological diversity within the country is conserved and used sustainably. In addition Sri Lanka has enacted various laws protecting its biodiversity. This chapter discusses the policy, institutional and legislative activity relating to the preservation of Sri Lanka's biodiversity.

The term Biological Diversity or Biodiversity is relatively new. However in Sri Lanka the basic concept of biodiversity and its conservation is as old as recorded history of the country, dating back to over 2000 years.

2. BIOSPHERE RESERVES

Compared to other Asian nations, Sri Lanka has greater biodiversity in a limited area thanks to its geographical and climatic diversity. Since 1970 the Department of Forests has declared 40 new Biosphere Reserves as reserve forests and proposed reserve forests. The declaration of Biosphere Reserves aims to protect the endemic ecosystems against deforestation. Sinharaja Biosphere Reserve in the wet zone and Hurulu Biosphere Reserve in the dry zone are among the most valuable sources of biodiversity in the world. However, the following factors have endangered this biodiversity. Recently the effect of human 'activities' had led to the extinction of species and deterioration of ecosystems at an alarming pace. Among these activities are, habitat changes caused by shifting cultivation, monocultures, fire, development and settlement projects, invasive species, use of agrochemicals and environmental pollution and so on.

3. POLICY AND LEGISLATION

Legislation relating to conservation and sustainable use of biological diversity is also old as the recorded history of the country. In the Buddhannehela pillar inscription of King Udaya III (935-938 AD) there is legal provision decreeing not to cut down trees in the jungle. (val vala dandu pat nokapanu is timber should not cut down in the forests.) The King had the authority to enact legislation regarding the use of lands and forests on the assumption that all lands in the entire island belonged to the him. Generally an ancient village was separated from another by a strip of Jungle. This strip of jungle served as the hunting ground of the people. A description which confirms this view is found in the

Kokebey rock inscription of King Bhatikabhaya (22BC -7 AD). Among the various grants donated for the vihara called Harayada in that inscription, there is also the tax which was levied in respect of the flesh of wild animals in that jungle such as deer (Axis), peacocks (Pavocristatus), and black antelopes (Prionailurus viuerrinus). In more recent history, the Convention on Biological Diversity, the major international legal instrument for biodiversity, has been signed and ratified by Sri Lanka in 1992and 1994 respectively.

In Sri Lanka the various different laws in force relating to environmental protection, many of which directly or indirectly relate to the conservation of species and ecosystems, add up to around 80. The most often cited ones are the Forest Ordinance, the Fauna and Flora Protection Ordinance, National Environmental Act, National Heritage Wilderness Area Act, Felling of Trees (Control) Act, Botanic Garden Ordinance, National Aquatic Resources Research and Development Act, Plant Protection Ordinance, Animal Diseases Act, Fisheries Ordinance, Coastal Conservation Act and the Custom Ordinance.

The Convention on Biological Diversity (CBD) is the major international legal instrument for the conservation of world's biodiversity. It has been ratified by over 165 countries as of March 1997. Sri Lanka ratified the Convention in March 1994. In addition to the CBD there are other international conventions dealing with biodiversity, notable among these are the Wetland Convention, the CITES Convention on Trade in Endangered Species and the Convention on Migratory Animals (Bonn Convention).

The CBD has introduced many new areas of concern in international relations regarding the conservation of biological diversity. These include the transfer of genetic materials from one country to another, the use of traditional knowledge of one country for technological development in another, the equitable sharing of benefits derived from the use of genetic resources and collaboration in research between developed and developing countries.

4. INSTITUTIONAL STRUCTURE

The biological resources of the country are administered by many State Institutions under the regulation of the Central Government and the Provincial Administration. Natural forests come under the jurisdiction of several state agencies, chiefly the Forest Department and the Department of Wildlife Conservation. Other institutions that have a role in the conservation and management of biological resources are the Department of Coast Conservation, the National Aquatic Resources Research and Development Agency, the Zoological Gardens, the National Botanical Gardens, the research institutes under the Ministry of Plantation Industry (CRI, RRI, TRI and SRI), the National Science Foundation, Central Environmental Authority and the Mahaweli Authority. In addition, the Provincial Ministries of the environment should have a responsibility for biodiversity conservation at the regional level. There are several other government organizations whose activities involve the consumptive use of biological diversity, notably the Department of Agriculture, Fisheries and Ayurveda. The Forest Department

falls into this category also, as timber and other forest products are harvested from the forests under its charge.

At the national policy level, the Ministries in charge of the subjects of environment, agriculture, lands, forests, plantations, fisheries, livestock, indigenous medicine, science and technology and the Provincial Council have a vital role to play in the conservation and sustainable use of biodiversity

5. GENERAL LAW FOR CONSERVATION OF FAUNA AND FLORA

Laws and Regulation on the Conservation of Species:
Ordinance to Provide for the Protection of Fauna and Flora of Sri Lanka 1937 (Chap.567) and its Amendments of 1942, 1944, 1945, 1949, 1964 and 1970.

Laws and Regulation on Hunting: Ordinance to Provide for the Protection of Fauna and Flora of Sri Lanka 1937 (Chap.567) and its Amendments of 1942, 1944, 1945, 1949, 1964 and 1970.

Laws and Regulation on Protected Area: Forest ordinance of 1907 (Chap 283) and its Amendments up to 1979.

State Land ordinances No.8 of 1947 and No. 9 of 1948

6. AREAS OF FURTHER REGULATION

Legislative and quasi-legislative measures, where appropriate, must be adopted in the context of the CBD to safeguard Sri Lanka's interests regarding the conservation and sustainable use of its biodiversity. Sovereign rights of the state over its biological diversity have to be recognized by law. Laws and regulations should be enacted to control access to the country's genetic resources and traditional knowledge and to ensure that there is equitable sharing of benefits from the use of resources. Action must be taken to incorporate "prior informed consent" and "mutually agreed terms" in agreements covering the export of genetic resources, the sharing of traditional knowledge and the carrying out of joint research.

7. CONCLUSION

Sri Lanka has been endowed with a wealth of rich biodiversity, unique to the country because of its climate and geography. However Sri Lanka's high population density, high level of poverty, and wide spread dependence on subsistent agriculture are exerting considerable pressure on the biodiversity of the country. A signatory to the fundamental international agreement in the area of biodiversity, Sri Lanka has adopted a number of laws and a substantial institutional structure to confront the degradation of its precious biodiversity. However, as is often the case in many South East Asian countries the legal, policy and institutional support for the conservation of biodiversity have not been able to

operate effectively, either because of a lack of effective enforcement of laws or inadequate implementation. Whatever the shortcomings are, the ultimate consequence is that the countries biodiversity is continuing to diminish.

Some future areas of regulation have been identified however the effective conservation of Sri Lanka's biodiversity will not be achieved until legislation moves away from a simple regulatory framework to an effective management framework and institutions strengthen their vertical and horizontal coordination between different agencies.

CHAPTER XIII

SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: WILDLIFE

Key Issues: Loss of Wildlife; Park Management; Forest Degradation; Illegal Poaching; Human-Animal Conflict; Livelihood of Local Peoples; Local Peoples' Dependency on Forests; Eco-development; Public Participation.

Policy Framework: National Conservation Strategy 1988; National Environmental Action Plan 1994.

Key Legislation: Conservation Strategy 1988; National Environmental Action Plan 1994; National Environment Act 1980; National Environment (Amendment) Act 1988; Fisheries and Aquatic Resources Act 1996; Forestry Ordinance; the Flora & Fauna Act.

Key Institutions: Ministry of Environment and Natural Resources; Central Environmental Authority; Department and Mahaweli Authority; Department of Wildlife Conservation; Ministry of Fisheries and Aquatic Resources.

1. INTRODUCTION

The term wildlife includes all species of animals and plants that are not domesticated by man. A tame animal from a wild species does not fall within this definition. Similarly, a wild plant found naturally or cultivated in a farm or a home garden does not become a domesticated plant. The main statute that deals with the conservation of wildlife in Sri Lanka is the Fauna and Flora Protection Ordinance (FFPO). This law provides for the protection of both wildlife and their habitats. Provisions in several other acts can be used to protect habitats as well as wildlife. Habitats of wildlife can be protected by the Forest Ordinance and the National Heritage Wilderness Areas Act. Others such as the Fisheries and Aquatic Resources Act and the Coast Conservation Act have provisions that can be used to protect certain species of wildlife and their respective habitats.

The evaluation of wildlife protection policy and the related law show that the initial purpose had of wildlife protection was mainly for the protection of the resources for continued exploitation and the collection of revenue from licensing. It provided for the protection of a few species, the regulation of hunting and capturing by licensing such activities, collection of revenues and the preserving or wildlife for future exploitation. Protected areas were initially known as "game parks" or areas that are designated to keep a stock of animals to be hunted (known as "game" to Europeans who consider hunting animals as a sport). Since independence, the diminishing habitats and the over

exploitation and reduction of wildlife has shifted the focus into conservation of species and habitats.

The present wildlife conservation policy, though not explicitly stated, can be understood by the analysis of the provisions of the relevant Acts. This can be summarized as follows.

(a) Declaration of areas and providing them with various degrees of protection by restriction of certain types of activities within them;
(b) Total protection for those species of animals and plants that need to be conserved by preventing exploitation;
(c) Restricting and regulation of the exploitation of other species with commercial potential;
(d) Leaving the rest of species for uncontrolled exploitation.

This four-point approach is based on the premise that both the species and their habitat need to be protected in order to ensure their survival. The FFPO, which is more oriented towards the conservation, and the Fisheries and Aquatic Resources Act (FARA), which is intended to ensure the continued exploitation of fisheries resources, are based on this same approach. This approach to managing natural resources is clear and simple, therefore easy to implement and monitor.

2. PROTECTION OF WILDLIFE HABITATS

The protection of habitats is an "indirect" method of wildlife conservation. According to the Fauna and Flora Protection Ordinance, two main types of protected areas can be declared.

National Reserves

These are declared on State Land. If there are any private lands in an area designated to be a National Reserve, they have to be acquired before the declaration.

The following types of activities are prohibited in National Reserves:

a) Unauthorized entry;
b) Hunting, wounding, harming, taking or keeping in possession a wild animal or part, taking or destroying the nest or eggs of birds or reptiles;
c) Destroying, damaging, collecting, taking or removing any plant;
d) Keeping in possession any devise or substance that can harm or destroy animals or plants;
e) Clear or break-up land for cultivation, mining or any other purpose;
f) Construction of or use of roads;
g) Unauthorized construction or occupation of any building; and
h) Introduction of any animal or allow any domestic animal to trespass.

The National Reserves are divided into seven categories, based mainly on the restriction of human activities that can be permitted or authorized in such areas. The amendment to the FFPO in 1993 removed the category known as the intermediate zone and introduced three new categories, namely the Refuge, Marine Reserve and the Buffer Zone. It is evident that several of these have the same degree of protection and that the different names have been adopted from a management point of view. The following is the degree of restriction on these categories.

(i) A permit to enter or remain is given for an official duty or to scientific research only - Strict Nature reserve.
(ii) A permit to enter and remain can be given for study and to observe fauna and flora. A fee can be prescribed -National Park.
(iii) A permit to enter and remain can be given. A fee can be prescribed - Nature Reserve.
(iv) Permitting not specified -Jungle Corridor, Marine Reserve, Refuge, Buffer Zone.

No person is allowed to construct a tourist hotel or to provide any services or facilities similar to those provided by a tourist hotel within a distance of one mile from the boundary of a National Reserve. Similarly, any person who wants to carry out any development activity (other than tourist hotels) within one mile from the boundary of a National Reserve has to obtain permission from the director of DWLC.

The provisions protect all animals and plants, either protected or unprotected within the boundaries.

Sanctuaries

This category of Protected Area can be declared on State Land and on private land as well. It affords protection to all animals and plants found inside the sanctuary boundaries. Unlike in National Reserves, it is not necessary to obtain a permit to enter into or remain in side a sanctuary.

The following activities are prohibited inside a sanctuary, inside state or private land:
(i) Hunt, kill or take any wild animal or have in possession any wild animal or part, or the taking or destroying of nests & eggs.
(ii) Use or construction of hides or ambushes for hunting or wounding a wild animal.
(iii) Set a trap or other instrument to kill or capture an animal.
(iv) Cause any act that disturbs or is likely to disturb an animal.

The following are deemed as offences if done in state land inside a sanctuary:
a) Destroying, damaging or collection or removal of any plant;
b) Clear or break-up land for cultivation, mining or other purposes;
c) Erect or occupy any building without permission;
d) Construct or use any road or path; and
e) Kindle or carry any fire.

A major drawback in the effective protection of both National Reserves and Sanctuaries is that the Ordinance has not given any powers to curb, control or prevent the pollution of these areas. The sources of pollution can be sometimes be inside a protected area (in a sanctuary) or outside, and could degrade and destroy the habitat and the wildlife if prompt action is not taken. At present, the DWLC can request either the Central Environmental Authority (CEA) or the local government authorities to take necessary action. This does not occur in a satisfactory manner and the DWLC should be given the necessary powers, including the power to obtain injunctions, to prevent pollution.

Protection of Species

This is the direct method of protecting species from harm. To be really effective, this has to be undertaken concurrently with the protection of habitats. In addition preventive measures have to be taken against threats such as the introduction of pest and predators, diseases and competitors. Some of these could be affected through legal means and others need management practices.

Protection of animals

The FFPO affords protection only to wild animals and has defined wild animals as animals that are not domestic. A domestic animal is defined as any of the following:

(i) any head of cattle, sheep, goat, horse, ass or mule;
(ii) dogs and cats
(iii) any domestic fowl or other birds commonly reared by men as poultry; and
(iv) any domesticated pig.

This definition clearly excludes all “tame” animals. A tame animal is a member of a wild species that has been reared by man. The previous definition offered the domestic status to several species (e.g. Elephants, deer, and peafowl) if men kept them. This definition excludes the elephants, but tamed elephants are dealt with in another part of the Ordinance.

In conferring protection to mammals, birds, and reptiles, the relevant sections have adopted the system known as “negative listing” in the naming of those that are given protection. A negative list has the names of those species that are not protected, as opposed to the more familiar “positive list” which specifies these that are protected.

When large numbers of species are given protection, a list of them becomes long and difficult to go through. If the number that is not protected in the particular class is few, then it is easier to give the names of the few that are unprotected and state that all the others that belong to the particular class are protected. It is however, not possible to have negative lists for classes of species which have very large numbers. A negative list makes it easy for law enforcement as the officials need only identify the few that are unprotected, which is made easier in mammals and birds as these are common and well-known.

The following are punishable offences if committed on a protected animal:

(i) Killing, wounding or injuring;
(ii) Taking or destroying a nest and any stage in the life cycle of animals that lay eggs or go through a metamorphosis (e.g. Larvae, nymphs, pupas);
(iii) Capturing or keeping in possession an animal dead or alive or the keeping of any part thereof, including those from any stage of the life cycle;
(iv) Use of any device or material that can be used for the purposes of killing, injuring, capturing, taking or keeping on animal in captivity; and
(v)) Expose, offer for sale or the transportation of any animal or a part thereof.

The purchase of an animal or a part such as the skin or hide for curing or drying has been made illegal in respect of mammals, reptiles, amphibians, fishes and invertebrates. These provisions have no special significance as these offences are covered under "keeping in possession of animals or parts".

The Ordinance also provides for the temporary protection of birds and eggs in specified areas by a regulation has almost lost significance because only 7 species are now in need of this provision.

Regarding the protection of mammals, elephants and buffaloes have been dealt with separately in s 2 and the term mammals in s 30 means mammals except these. In the protection of elephants the scope of the offence is the same, but the punishments are quite large. Unlike in the case of other mammals, the Director of DWLC has the power to issue permits for the capture of an elephant or buffalo to be kept in captivity.

Mammals and reptiles are protected and those that are not protected are in placed in a Schedule. The list of unprotected mammals include those that are common and those that damage crops. The non-protected rats and mice are often confused because only the scientific names of two household rats are given but in the column giving common names, it clearly states that it includes species except the endemic species. Although the Bandicoot Rat (Bandicoot indica) is not in this schedule, it is not protected, as it is not an endemic. The 5 species of unprotected reptiles are all poisonous snakes, which have a lethal bite. It may well be that these have been excluded from being protected for this reason.

Birds have been protected and a list of non-protected species, numbering seven has been Scheduled. In the list is the Striated Weaver (ploceus maynor) a rare bird with a great demand as a pet, which needs to be removed from the schedule. Before the amendment in 1993, there was a category of birds that were not protected during an "open season" and could be shot during this period without a license. The open season was from November to April. This list contained 25 species, including 13 migrants. A negative list for birds means any new migrant is automatically protected and it is especially important as Sri Lanka is at the end of the migration rout and more new migrants are recorded every year. A strange feature in the section on birds is that the fine is quite low (Rs.5000-

10 000) in comparison to fishes and amphibians which all draw higher fines (Rs.10 000-20 000).

Amphibians and fishes are protected. Schedule III lists the 19 protected species of amphibians. The identification of many of these requires considerable expertise. In addition, several new species have been described and another large number are yet to be formally described. All these newly found species are rare, endemic and in need of protection. For these reasons it is advisable to leave out the several common species in a negative list, as a positive list will become cumbersome.

A list of 12 species of freshwater fishes and 7 marine species are protected. There are many marine and freshwater fishes that need to be included in this list for instance, there are 11 species of Butterfly fishes that cannot survive long in aquariums due to their specialized diet on corals but are however, caught to be exported where they invariably die of starvation. They are known as 'cut-flower fishes' in trade circles and allowing them to be exported has given a bad name to the country. There are some other rare species of fishes, both marine and freshwater that also need to be given protection.

The export of any indigenous animal or any part thereof can only be done under a permit issued by the Director, DWLC. The discretion of the Director is limited, as such permits cannot be issued for commercial purposes. It is recognized throughout the world that the trading of wild animals, both legal and illegal has caused the extinction of a large number of species. The Convention on the International Trade of Endangered Species (CITES) has been ratified in many countries that have recognized this threat. The Convention is effected by a system of permits and both s 37 and s 40 are broad and strong enough to effectively protect wild animals from being exploited and to control or prevent the import of animals that may endanger a species.

The provisions that relate to exports apply to both protected and unprotected animals. There are several other provisions that confer a certain degree of protection to those not protected as a species. A person who keeps an unprotected animal has to obtain a permit from the Director DWLC who has the power to set specific conditions in such permits and can inspect premises where such animals are kept and may seize any animal kept in contravention to such conditions. Although a person is permitted to hunt unprotected animals if they are outside protected areas, this is again subject to some controls. It is prohibited to use a light at night to dazzle or attract an animal in order to capture or hunt it. No animal should be killed within a distance of l00 yards from a waterhole. Also no animals should be hunted or taken at night (between sunset and sunrise) nor should any net or trap e set to kill or capture them. The use of poisons, stupefying substances or explosives is also prohibited.

Protection of Plants

The following are offences, if committed on any protected plant species:

(i) remove, uproot, destroy or cause any damage or injury to a plant growing on another person's property or in a public place;
(ii) destroy it if it is in one's own property;
(iii) remove or destroy, damage or injure a tree on which a protected epiphyte is growing ;
(iv) sell or expose for sale.

Reserved Forests (Forest Reserves)

Reserved Forests are declared by the Minister who may issue a notice in the Gazette. The Minster can similarly declare that a Reserved Forest or a part thereof is no longer regarded as such. The following acts are prohibited inside Reserved Forests

a) Willfully damaging trees;
b) Damage trees by a negligent act;
c) Sets fire, to the forest, kindle or leave a fire burning;
d) Fell, cut, collect, convert, remove or transport timber or forest produce or have in possession or control any tree or forest produce;
e) Erect scaffolding or saw pits;
f) Clear or break up land or cultivate any land already cleared;
g) Construct a building or occupy any building whether temporary or permanent;
h) Construct or use a road;
i) Quarry minerals;
j) Hunting, shooting, setting traps and fishing;
k) Poisoning water;
I) Trespasses into a forest reserve;
m) Permit cattle to trespass.

These provisions are similar to those that afford protection to National Reserves and Sanctuaries under the Fauna and Flora Protection Ordinance, taking into account that trespass or unlawful entry into a Reserved Forest is made an offence. This need to have permission to enter is of a similar nature to the protection of National Reserves, but the status of the Reserved Forests in relation to National Reserves can be distinguished by taking s 8 of the Forest Ordinance into consideration. This section states that none of the aforementioned will be prohibited if it is done in accordance with the regulations made by the Minister or with permission in writing from an Authorized Forest Officer.

This, in other words means that provisions are not really intended to protect and conserve the habitats and wildlife but to regulate the use or exploitation of such forests by keeping it under a system of permits. The exploitation under s 8 was effected by the regulations (titled "Forest Regulations") published in the Gazette Extraordinary No 14,710/7 of 29-08-1966, which granted permission to many of these activities. This set of regulations was replaced by Forest Regulations, No 01 of 1979 published in Gazette Extraordinary No 68/14 of 26.12.1979 these have completely prohibited the use of explosives or poisonous substances for the capture of or the destruction of any animal in Reserved Forest. But these still make it possible to fell trees, collect forest produce, pasture cattle,

mine for minerals or even hunt animals (including fishing) under a permit issued by the Conservator of Forests or by an officer not below the rank of a Divisional Forest Officer.

Village Forests

These are forests that are declared as such for the benefit of a village community or a group of village communities. The Minister may make the declaration by publishing an order in the Gazette, he may also cancel or amend the order. This kind of order may not contravene or affect the right a person has in or over such a forest (a private right) if it existed before the declaration.

A community, in whose interest the village forest has been declared, can use the resources of the forest including the hunting and fishing and felling of timber. There are 24 species of tree listed in a Schedule that are considered property of the State. In order to injured these trees necessary permission must be obtained. It is erroneously assumed by some that these trees in Village Forests receive total protection.

The cutting of a scheduled tree, or the pasturing of cattle can only be done in accordance with the regulations dictated in a permit. The only act totally prohibited in a Village Forest is the poisoning of water. The Minister can make regulations for the management of a Village Forest and the duties of a community in respect of the protection and improvement of the Forest. This provision is the only possible method of conserving wildlife.

Other Forests

All forests that are not Reserved Forests or Village Forests belong to this category. In these all land is under the authority of the Government Agent who therefore has the same power as the Conservator of Forests (or any officer authorized to issue permits for activities such as clearing of land, hunting and collection of forest produce.

The rules regarding forests other than Reserved Forests and Village Forests were gazetted on 29-08-1966 in the Gazette Extraordinary No. 14 707/7. These were later rescinded and a new set of regulations known as Forest Rules No 1 1979 were enacted by the Gazette Extraordinary No 68/14 of 26-12-1979. Under these regulations it is prohibited to use poisons to kill or capture fish or to use explosives to kill fish or other animals. It is also an offence to kindle a fire other than under the authority of a permit

These rules show that very little protection can be given to a forest that falls into this category. The limited amount of protection that is afforded can only be made by regulation of permitting which can only be effective if the forest, its resources, the potential threats and conservation requirements have been studied beforehand. Given that most of the Reserved Forests have been partly logged, it follows that parts of these forests have also been degraded.

3. LEGISLATION AND INSTITUTIONS

Forest Ordinance

This Ordinance is not inherently a wildlife conservation law and is mainly focused on the use of forests, forest produce, felling of timber and the transportation of timber and other forest products. The Ordinance has a very broad definition of 'forests' including all land at the disposal of the State. The provisions of this Ordinance only afford protection to habitats of wildlife and do not have any provisions to protect any species of plants or trees, as in the Fauna and Flora Protection Ordinance. Another form of indirect control can be exerted by the regulation of the collection of forest produce, which includes trees, plants and all parts and produces of these plants.

Although the ordinance provides that all State Land be considered as forests, the Minister in charge of the subject can declare two types of forests by publishing regulations in the Gazette.

National Heritage Wilderness Areas Act

This Act provides for the preservation of eco-systems, genetic resources and habitats of threatened species of animals and plants of universal value from the point of view of science or conservation in their natural state. The Act only provides for the preservation of habitats, which harbour such resources. Under this Act any area that meets one of these criteria can be declared as a National Heritage Wilderness Area by a notification published in the Gazette. It is imperative that such land is State Land in order to make this declaration. Unlike under other Acts, the Minister can make a declaration only after consulting the Ministers in charge of the subjects of environment, wildlife, agriculture, cultural affairs, fisheries and indigenous medicine. This has made the whole process a long-drawn one.

Under s 7 the Conservator of Forests has been named as the Competent Authority appointed to carry out the tasks required by the Act. Among the functions assigned to the Competent Authority are the issue of permits to enter Wilderness Areas, for the protection of habitat and the species within, for providing facilities for the observation, study and enjoyment of such places and for preparing management plans in consultation with other relevant bodies.

An important function of the Competent Authority is to issue permits to enter and remain in a National Heritage Wilderness Area. In addition, if in the discharge of official duties, permits can be issued for the observation of plants and animals and for the conduct of scientific studies. This ability to issue permits empowers the Competent Authority to encourage and provide and improve facilities for the observation and study, and also the enjoyment, of a National Heritage Wilderness Area. However, it is well known that visitors in large numbers cause a lot of disturbances, degradation and the destruction of habitats and the animals and plants within them. Therefore, these provisions may defeat the purpose of declaring an Area to preserve unique eco-systems and genetic resources in their natural state.

The degree of protection given to a National Heritage Wilderness Area is similar to the degree of protection afforded to National Reserves under the Fauna and Flora Protection Ordinance and the provisions relating to visitors makes their status similar to that of a National Park or a Nature Reserve and not similar to a strict Nature Reserve as is sometimes argued.

Fisheries and Aquatic Resources Act

This Act is intended to manage, regulate, conserve and develop the fisheries and aquatic resources of Sri Lanka. The term "fish" as defined of the Act is quite broad and includes any aquatic animal from aquatic invertebrates to aquatic mammals in any stage of their life cycle (such as eggs or spawn) and even includes zooplankton. This definition is biologically incorrect and has therefore drawn a lot of criticism from scientists. However a simple inclusive definition serves the purposes of implementation better than a complicated, but biologically correct one that may cause a lot of confusion in enforcement. Similarly the term "aquatic resources" as defined by the Act includes all aquatic plants and non-living substances found in aquatic mediums.

This Act, like the Fauna and Flora Ordinance has, taken the four-point approach in the management of resources and provides for the protection of habitats and species.

Institutional Structure

The conservation of wildlife and the management of wildlife habitats is entrusted to the Department of Wildlife Conservation. Offences under the Fauna and Flora Ordinance are cognizable.

In order to help the Department of Wildlife Conservation the Minister can appoint prescribed Officers. In addition to the Officers of DWLC, the Gazette No.9773 of 24-09-1947 has appointed all Officers above the rank of Forest Guard (appointed under the Forest Ordinance) as prescribed Officers. All Police Officers are also deemed to be in this category under the Police Ordinance.

The Officers can enforce the provisions that deal with imports and exports under the Customs Ordinance. They can also apply this Ordinance in dealing with offences, or in respect of an offence made under the Fisheries and Aquatic Resources Act.

The Forest Conservation Department can enforce the provisions of the Forest Ordinance and the provisions of the National Heritage Wilderness Areas Act. The Department of Fisheries and Aquatic Resources enforces the Fisheries and Aquatic Resources Act.

4. CONCLUSION

Wildlife in Sri Lanka is protected by a number of statutory tools, particularly the Fauna and Flora Protection Ordinance. Through this law and provisions in several other acts, namely the Forest Ordinance, the National Heritage Wilderness Areas Act, the Fisheries and Aquatic Resources Act and the Coast Conservation, protection of both wildlife and their habitats is provided.

Historically, the purpose of wildlife conservation was mainly for the protection of the resources for continued exploitation and the collection of revenue from licensing. It provided for the protection of a few species, the regulation of hunting and capturing by licensing such activities, collection of revenues and the preserving or wildlife for future exploitation. However, what has been shown is that the legislative focus has changed and the diminishing habitats and the over exploitation and reduction of wildlife has shifted the focus into conservation of species and their habitats.

CHAPTER XIV

SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: ECO-TOURISM

Key Issues: Wildlife and Park Management; Loss of Biodiversity; Forests Degradation; Environment Education; Livelihood of Local Peoples.

Key Policies: Tourism Policy Statement; Aviation Policy.

Key Legislation: Tourist Board Act No. 10 1966; Tourist Development Act No. 14 1968; National Environmental Act No. 47 1980; National Environmental (Amendment) Act No. 47 1988.

Key Institutions: Ministry of Tourism; Tourist Board; Central Environmental Authority; Local Authorities; Coast Conservation Department; Wildlife Department.

1. INTRODUCTION

Tourism can potentially have a severe negative impact on the environment. Not only through the careless actions of tourists themselves but also through the repercussions of development undertaken to accommodate such travelers. With the tempting prospect of boosting the country's economy is on offer, it is possible that the economic goals of tourism could supersede the goals of conservation. This chapter describes the institutions, laws and policy relating to tourism.

Major issues pertaining to tourism include the construction of hotels and advertising in 'places of scenic beauty'. Advertising has become a specific problem along highways. To overcome these issues the Commissioner of the Local Government and Road Development Authority may remove without compensation offending advertisements, structures or junkyards in areas declared as 'Protected Highways' and 'science reserves' respectively. Legislative protection has been created by the Tourist Board 1966 and the Tourist Development Act 1968

This chapter also includes the Tourism Policy Statement, which gives a detailed account of the government's plans relating to the tourism industry. The Policy includes environmental measures.

The later part of this chapter provides a case study of the Kandalama Hotel. The award winning Kandalama Hotel is the first hotel in Asia to be certified under the provisions of Agenda 21 of the Rio Earth Summit as a 'Green Globe' hotel.

2. THE INSTITUTIONS REGARDING TOURISM

Ministry of Tourism and the Tourist Board are the main institutions involved in tourism. However when project approvals are sought the Local Authorities as well as the Central Environment Authority are involved in granting them where necessary.

3. LEGISLATION AND REGULATIONS

Legislation and regulations regarding tourism are essentially found in two main Acts. These are the Tourist Board Act No. 10 of 1966 and the Tourist Development Act No. 14 of 1968. The following points reflect some of their major features:

- The Tourist Development Act provides for the promotion of Tourist Development and provides for the promotion and carrying out of the Tourist Development Project.
- The Act No. 14 of 1968 has been amended by Act No. 57 of 1981 and Act No. 02 of 1987.
- According to s 74 and s 96 of the Tourist Development Act, regulations have been made for the protection of highways and places of scenic beauty and for the control of junkyards. This has been published in Gazette No. 14 839 dated 31st January 1969.

Additionally:

- The National Environmental Act No. 47 of 1980 as amended by Act No. 56 of 1988 provides provisions to protect scenic beauty.
- The Coast Conservation Act also has a role in the approval of projects building Tourist Hotels.

4. TOURISM POLICY STATEMENT

Preamble

01. The Government recognizes tourism as essential for the economic and social development of Sri Lanka. Accordingly, tourism is accorded high priority in its overall program of national development. The Government has already declared tourism as a ‘thrust industry’.

02. Internationally tourism has become the fastest growing industry and has emerged as the largest contributor to the world GDP (Gross Domestic Product) and employment, accounting for one-tenth of each with correspondingly high tax-related revenues and investment. International travel and tourism receipts grew faster than the total value of world trade and overtook all other categories of exports three years ago, surpassing crude oil and petroleum products, passenger cars, electronic equipment, clothing, textiles and raw materials.

03. Global Tourism Forecasts made by the World Tourism Organization (WTO) indicate that international tourist arrivals will grow over 4% annually during the next two and half decades from $564 million in 1995 to $1047 million in 2010 and $1602 million in 2020.

The regional breakdown of these forecasts indicates that tourist arrivals to the South Asian region will increase at a higher average annual rate of around 6%. Hence Sri Lanka has good prospects for a major thrust in tourism expansion over the next two and half decades, as it is the major tourist destination in the region after India.

04. The Government is conscious and mindful of the potential adverse effects that uncontrolled and haphazard development of tourism can have on the society and the physical environment. Therefore, the Government will undertake tourism development in terms of the policy guidelines set out below.

Pace of Development and Targets

05. Tourism development will be undertaken on a planned and sustainable basis and at a moderate rate as recommended in the Sri Lanka Tourism Master Plan (1992-2001), by taking into consideration the socio-cultural and environmental absorption capacity. The Plan envisages a target of 875,000 tourist arrivals by the year 2001 and around one million by the year 2002.

06. The pace and extent of tourism development envisaged in the Plan is such that it would become a key sector of the national economy of Sri Lanka in the medium term.

Types of Tourism

07. Tourism development will be based on the national attributes and inherited natural and socio-cultural attractions of the country. The marine environment of the island country, remains of the ancient civilization in the historic cities, natural beauty of the hill country region and the friendliness and the hospitability of the Sri Lankan people will take precedence over all other attractions.

08. While the main thrust of promotion will be directed at attracting holiday, vacation and site-seeing tourists, attempts will be made to diversify the tourism demand by tapping the other market segments such as ‘Special Interest’ and MICE travel. Eco-tourism will be developed as an important branch of ‘Special Interest’ tourism.

09. The overall marketing strategy, including the product strategy, promotional strategy and communications strategy will be directed at attracting higher spending quality tourism with a view to maximizing the economic benefits, while

at the same time avoiding the potential adverse impacts that the low spending mass tourism can have on the Sri Lanka society and culture.

Incentives for Tourism Development

10. The Government will provide, as and when it considers necessary, a package of fiscal, monetary and other incentives to encourage and mobilize the private sector, both domestic and foreign, to invest in tourism projects and to undertake their operations. The Government has already provided a package of such incentives to enable the industry to get through the difficult period caused as a result of terrorist activities.

Facilities Development

11. The hotel development program is progressing well and is ahead of the targets stipulated in the Tourism Master Plan. There are already 159 hotels in operation with approximately 12 600 guest rooms. In addition there are 49 other hotel projects with 2660 rooms, which have been given final approval for construction. Furthermore, after inspecting the sites, 92 other hotel projects with 5825 rooms, have been given preliminary clearance for preparation of detailed architectural plans. All these add to a little over 21 000 rooms which would be more than adequate to accommodate the targeted one million tourist arrivals by the year 2002.

12. In addition to accommodation facilities, the Government will also promote the development of ancillary services such as recreation, entertainment, shopping and speciality food services. Action has already been taken to promote these services as indicated below.

    a. Five golf course projects have been approved (out of which one will be ready for operation in mid 1998) to provide land-based recreational facilities.

    b. A study has already been completed with UNDP/WTO assistance on the development of 'ocean-based' recreational activities. Action will be taken to implement the recommendations of this study.

    c. The Government has already approved the setting up of a Living Arts Centre at the Colombo Dutch Hospital Building, to provide entertainment to tourists.

    d. Two other proposals to provide entertainment services are now being processed. One to set up a Sea Life Park at Muturajawela and the other to establish a Son-et-Lumier show at Sigiriya, with Sigiriya Rock as the background.

e. The Government as already commissioned a study with WTO assistance to set up down-town duty-free shopping facilities with international brand-named goods.

f. It has been proposed to declare Sita Eliya in Nuwara Eliya as a place of worship and develop it to attract Indian tourists in large numbers.

g. Action will be taken to implement the recommendations of the Handicraft and Souvenir Development Study, conducted with UNDP/WTO assistance.

13. Approvals have already been given to set up a large number of 'Speciality Restaurants' serving popular international cuisines like Japanese, Korean, Thai, Indian, Chinese, French, German, Dutch and Mexican foods.

Environmental Considerations

14. The tourism industry will be developed according to the comprehensive environmental standards stipulated by the Central Environmental Authority and other relevant governmental agencies such as Coast Conservation Department, Wildlife Department and the Immigration Department etc.

15. All new tourist hotels irrespective of their size should be required to install their own wastewater treatment plant in order to protect pollution of the beaches and other water bodies.

Marketing and Promotion

16. The Government has already launched an Image Building Campaign, which will be carried out in 18 prime tourists generating markets over a period of two years, to improve the image of Sri Lanka as an attractive tourist destination.

17. In addition, the regular promotional campaigns will be intensified in all markets in order to accelerate the growth of tourist arrivals to achieve the one million target by the year 2002.

18. At present the bulk of tourists visiting Sri Lanka (amounting to over two-thirds), come from European markets. Action will be taken to diversify the tourist markets sources by implementing the recommendations of a study already completed, namely the Asian Market Development Strategy and Plan, with UNDP/WTO assistance. The main focus of promotion will be the emerging tourist generating markets of Japan, South Korea, Taiwan, Hong Kong, Singapore, Malaysia, Thailand and India.

Training and Manpower Development

19. The Government recognizes that training and manpower development are essential prerequisites for successful operation of the tourist industry. Therefore, in terms of its national development priorities and strategies, the Government will undertake, as part of its overall human resources development program, the necessary manpower and skills development for efficient operation and management of the tourist industry.

20. An ultra modern Hotel School complex is currently under construction. The school will provide training at all levels to meet the manpower requirements of the hotel and catering industry. In addition, a major Trainer Development Program funded by the EU has already been completed to provide training at entry level.

Role of the Private Sector

21. In accordance with the Government's Development Strategy, the Private Sector will play a major role in the development and promotion of the tourism industry while the Government acts as a facilitator.

22. The Government will encourage the different sub-sectors of the tourist industry to form trade or professional associations to enable them to safeguard their interests and make representations to the Government on matters affecting their members.

23. Such associations will form the nucleus for consultation with the travel trade in making strategic decisions relating to the development and promotion of tourism.

Tourism Organization

24. The Government will take action to re-structure the present Tourist Board with a view to promoting a healthy partnership between the Government and the private sector. For this purpose, the Tourist Board Act will be repealed and replaced it with a Statutory Body to be called 'Tourism Authority of Sri Lanka' with the majority of Directors of the Board of Management drawn from the private sector.

25. Provision will also be made for the new Authority to set up and operate a Tourist Promotional Cess Fund by charging a cess on the business turnover of all recognized tourism business establishments such as hotels, guesthouses, travel agencies, restaurants, recreational and entertainment agencies etc.

Aviation Policy

26. The Tourism Development Policy will be coordinated with the Aviation Policy in order to promote the harmonious growth and development of both sectors. The

Aviation industry needs to be expanded by promoting scheduled and chartered air carrier services to meet the growing demand for seats from the tourism sector.

Economic Considerations

27. Tourism development will be undertaken in such a manner as to ensure maximum economic benefits to the country by way of foreign exchange earnings, income generation, employment creation and public sector revenue generation. Also, the spatial distribution of tourism development in remote and under-developed areas will ensure that the economic and social benefits of tourism will percolate down to a wider section of the local community.

28. Tourism sector linkages with the other production sectors of the national economy will be strengthened so that tourism demand will act as a catalyst for development of the other economic sectors. This will help maximize the indirect and induced effects of tourism through the operation of the multiplier principle.

29. A system to continuously monitor the economic benefits of tourism will be established by building an Econometric Model using the technique of input-output tables. For this purpose foreign funding assistance will be sought from the WTO/UNDP sources

5. THE KANDALAMA HOTEL IN SRI LANKA: AN ECO EXPERIENCE

The Kandalama Hotel is the first hotel in Asia to be certified under the provisions of Agenda 21 of the Rio Earth Summit as a Green Globe Hotel. Built next to an ancient irrigation tank and surrounded by tropical dry evergreen forest, the hotel is within Sri Lanka's 'Cultural Triangle' and is flanked by two World Heritage Sites. The initial public protest due to the sensitivity of the hotel's location was overcome through the completion of a formal EIA report and the successful implementation of the report's recommendations. The environmentally sensitive design of the hotel avoids disturbance to the existing landform profile. Any trees that needed to be removed during construction were root-balled and replanted. To replant denuded patches of land, a nursery of 3 000 indigenous plants was established. The village community was given the highest priority in the provision of employment and many of the services and utilities brought into the remote rural area were extended to local villages including electricity, roadways, deep wells and bio-gas generators.

The environmental management of hotel operations are categorized into six key elements: waste minimization (reuse, recycling and reducing); energy efficiency conservation and management; fresh water resources management; wastewater management; environmentally sensitive purchasing; and social and cultural development. These areas are in accordance with the elements laid out in Agenda 21 of the Rio Earth Summit. In order to obtain total participation of hotel staff, environmental committees have been established to cover key factors and every employee is a member of at least one

committee. Environmental conservation is an essential responsibility in everyone's job description. The hotel's environmental policy is available to the public and the environment factors are deeply integrated into the hotel management. Leaflets and brochures with emphasis on environmental conservation are available for all stakeholders. Guests have access to information on nature, special bird watching trails, the surrounding forest, its fauna, flora and its unique bio-diversity. Sustainable practices such as use of rainwater and solar heating panels are currently being employed, whilst windmill pumps and biogas generation are planned for the future.

In recognition of the standards of environmental management adopted by Aitken Spence, the operators of the Kandalama Hotel, the hotel as won the following environmental awards: International Green Globe Award for 1996, 1997, 1998 and 1999; Sri Lanka Association for the Advancement of Science Award 1997; TRAVTALK Award 1997awarded by the World Tourism and Travel Council; and the PATA Green Leaf (Gold Award) for Environmental Education 2000.

6. CONCLUSION

The Sri Lankan Government clearly has a desire to exploit the profitability of the rapidly growing tourism industry. This is demonstrated by the wording of the preamble to the Tourism Policy Statement. The essential issue regarding this is that the exploitation of the industry for financial profit may actuate the deterioration of the environment. The key factor is to balance the desire for profit and it's negative effects, with the protection of the environment. In order to achieve this balance the Tourism Policy Statement relies on the "comprehensive environmental standards stipulated by the Central Environmental Authority and other relevant governmental agencies" however on the whole environmental issues are largely absent from the Policy.

The award winning Kandalama Hotel illustrates how the expansion of the tourism industry and the conservation of the environment can be achieved simultaneously however it is doubtful that the success of the Hotel could be replicated in every tourism venture undertaken in the future. The most desirable development in this area would be the creation of some type of legislative and institutional framework that could systematically ensure the protection of the environment in tourism developments. Currently no such framework is apparent.

CHAPTER XV

STATUTORY TOOLS

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

Key Legislation: National Environment Protection Act 1980 (Amended in 1988); the State Lands Ordinance (No.8 of 1947, Part IX) National Water Supply and Drainage Board Act No.2 of 1974, National Environment Action Plan (NEAP) 1998; National Environmental (Protection and Quality) Regulations No.01 of 1990; Coastal Conservation Act of 1981 amended in1988.

Key Institutions: Mahaweli Authority of Sri Lanka; Ministry of Environment and Natural Resources; Coastal Conservation Department; National Environmental Steering Committee; Central Environmental Authority; Ministry of Finance, Planning, Ethnic Affairs, and National Integration; National Planning Department; Board of Infrastructure Investment

1. INTRODUCTION

Statutes often do more than merely state laws and define when they are broken. Much of their strength derives from the bodies, schemes, plans, programs and tools they create to ensure their enforcement and execution. The various institutions and bodies relevant to Sri Lanka have been detailed in the preceding chapters; this chapter however describes the various tools available to those bodies and institutions to effect the laws of the country.

The system of licensing and permitting used to regulate the use natural resources and to control the impact on the environment is a major tool used in various enactments. Another major tool is the process of Environmental Impact Assessments. Introduced island wide in 1988, this tool determines the impact a proposed project will have on the environment. Essential to the operation of this process is public participation and the right to information. Tools devised to ensure these fundamental requirements are also discussed below. The SEA, a tool similar to an EIA is covered, with an emphasis on the benefits of taking a higher-level view of environmental project assessment. The use of standards across industries, created by the National Environment Act and regulated by the Gazette notification of the 2nd of February 1990 are also effective statutory tools.

2. LICENSES AND PERMITTING

The Sri Lanka has a framework law, the National Environmental Protection Act that established the Central Environmental Authority. Many other laws have been enacted over the years, among the most are: the National Environment Protection Act 1980 (Amended in 1988); the State Lands Ordinance (No.8 of 1947, Part IX), which provides for the regulation and control of public waters and streams through a system of permits; the Irrigation Ordinance (No.32 of 1946 with amendments), which consolidates laws relating to irrigation; The Mahaweli Authority of Sri Lanka Act (No.23 of 1979), which empowers MASL to use and develop the water resources of the Mahaweli River; and the National Water Supply and Drainage Board Act (No.2 of 1974, as amended), which describes the statutory duties of the NWSDB to provide water for public, domestic and industrial purposes. The Electricity Act (No.19 of 1950, as amended) provides licensing of installations for the generation of electricity. These licences confer all rights necessary for the purpose of electricity generation including the right to use water; the Ceylon Electricity Board Act (No.17 of 1969, as amended) describes the duty of the CEB to develop and operate systems for the supply of electricity including the right to use water for hydropower; the Fisheries and Aquatic Resources Act (No.2 of 1996) provides for the licensing of fisheries and aquacultural operations which require an allocation of water to carry out approved activities. The National Environmental Act No.47 of 1980 with Amendment Act no.56 of 1988 states that "no person shall pollute any inland waters of Sri Lanka or cause or permit to cause pollution in the inland waters of Sri Lanka". The concern shown by successive governments of the increasing level of water pollution and the resultant degradation of the living environment is clearly evident from policy measures and instruments set in place during the last few decades. These include the National Conservation Strategy, the National Environment Action Plan (NEAP) 1998 - 2001, the Pollution Abatement Strategy and the Wetland Conservation Plan.

The prevalent use of licensing and permitting is evident throughout these environmental laws. This section of the chapter focuses on the licensing system established by the National Environment Act. Several provisions of the Act are provided, including general provisions about the operation of the licensing scheme and the issues relating to application for licences.

As suggested the licensing system used throughout Sri Lanka is established by the National Environmental Act. The principal economic instrument now used in Sri Lanka is the Environmental Protection License Scheme. Part IV of the National Environmental Act No.47 of 1980 (amended by Act No.56 of 1988) provides for environment protection and contains the legal framework for the issue of licenses. The National Environmental (Protection and Quality) Regulations No.01 of 1990, Gazetted on 2-2-1990 contains the procedure to make the EPL process operational in accordance with the enabling legislation.

The power to implement the EPL process in respect of 15 types of industry (referred to as low polluting industry) was delegated to Local Authorities by the CEA with effect from January 01 1994. A further 5 industries were added to the list in 1996.

NEA provides that no person shall discharge, deposit or emit waste into the environment, which will cause pollution except:

- Under the authority of a license issued by the Central Environmental Authority and;
- In accordance with such standards and criteria as may be prescribed under this Act.

With regards to licensing the NEA also provides the following:

- The licence shall be valid for one year from the date of issue.
- An application for renewal of the licence should be made at least one month prior to the date of expiry of the licence.
- The holder of the licence shall permit the Director -General or any other officer duly authorized by him in writing, to enter at any time the premises in respect of which the licence is issued to examine and inspect any equipment or industrial plant.
- The holder of the licence shall comply with any requirement communicated from time to time by the Authority.
- The holder of the licence shall ensure the monitoring of environmental pollution or other acts that the Authority considers necessary to protect the environment.
- The licence is valid only for the type and nature of the industry, process, operation as stated in the preliminary application.
- The Authority may, before issuing an order suspending or canceling a licence under section 23D of the Act gives the holder of the licence an opportunity to show cause why such order should not be issued.
- Every applicant or every holder of a licence shall comply with any directions given by or on behalf of the Authority for the purpose of protecting the environment. Every person who acts in contravention of any regulations commits an offence punishable under s 31 of the National Environmental Act.

The NEA has also made provisions relating to the application for and issuing of licences. Issues surrounding the application for licences are discussed in the following paragraphs.

An application for the license shall be made:

a) Separately, in respect of each premises at which the acts authorized by the licence are carried out.
b) Accompanied by a receipt for the payment of the fee specified in Schedule III here to.
c) At least 30 days prior to the relevant date or the date on which the applicant is required to have the licence, whichever is earlier,

Every licence issued by the Authority shall be:

a) Valid for a period of one year, subject to any suspension or cancellation of the licence under section 23 D of the Act; and
b) No irreversible damage or hazard to man and environment or any nuisance will result from the acts authorized by the licence; and
c) The applicant must take adequate steps to ensure the protection of the environment in accordance with the requirements of the law.

An application for a renewa1 of the licence shall be made:

a) at least one month before the date of expiry of the licence or one month before effecting any changes, alterations or extensions to the premises at which the acts authorized by the licence are carried out, as the case may be;
b) accompanied by a receipt for the payment of the fee for the renewal of licence specified in Schedule III.

Any applicant who is aggrieved by the refusal of the Authority to grant a licence, or any holder of a licence who is aggrieved by the suspension or cancellation of a licence or the refusal to renew a licence may, within thirty days after the date of notification of such decision to him, appeal in writing the decision. Appeal are to be directed to the Secretary of the Ministry in charge of the subject of policy planning and implementation. The appellant shall be given an opportunity of making representations in person or by authorized representative and the decision appealed from may be set aside, varied or confirmed. The Authority shall give effect to the secretary's decision. It shall be final and conclusive.

Licences holders have further responsibilities, the fulfillment of which is essential to the integrity of the licensing scheme. The holder of a licence shall forthwith notify the Authority of:

a) any changes made or proposed to be made in the particulars furnished in connection with his application for a licence;
b) any decision to terminate any activity to which the licence relates; and
c) the license holder shall comply with any directions that may be issued by the Authority to prevent or mitigate environmental pollution and hazards.

3. PUBLIC PARTICIPATION

The Central Environmental Authority published a special handbook in 1997 relating to public participation, with the help of the Ministry of Forestry and Environment under the CEA publication series. It shows the value of public participation in environment activities.

The following section describes the process of public participation, which is achieved through meetings involving the public, the developers and the Project Approving Agency.

Public Participation starts at the stage of 'scooping'. This is a series of several meetings at which all those interested or concerned in a new development project are given an opportunity to make known their views. The purpose of scooping is to find out what environmental effects and problems the project might have and to decide if the developer must undertake an EIA or IEE.

The present the rules merely state that the Project Approving Agency (PAA) *may* take into consideration the views of the public, hence it is important for members of the public to write to the PAA as soon as they become aware of a project. The letter should contain a name, address and contact phone number. In the letter it should state the concerns briefly and if concerned party has any documents to support their concerns they should be included. At the scooping meeting the PAA and other government agencies wi1l also raise their concerns. During the meeting the PAA will make a declaration of the environmental effects that may take place through the project. If the public feels that any of these issues are of particularly long duration or have significantly wide extent or high intensities it is important that they say so. For instance, the intensity and extent of an environmental effect would often depend on the context in which it takes place.

These meetings then review the 'bigness' or 'smallness' of the environmental effects. If the project has 'big' effects then the law states that the developer should be asked to perform an EIA. Projects that do not have significant environmental effects should only be required to perform a simple IEE. It is made sure that the members of the public concerned are included in the Terms of Reference (TOR).

After the Developer is issued a TOR by the PPA, the developer hires consultants to carry out the EIA. Consultants are advised to make contact with affected members of the public and discuss the possible effects of the project. It is therefore important for the public to make contact with the consultants and make their interests and views known to them.

When members of the public wish to make comments, they must record them and send them in a timely manner (the letter must be posted on or before the 30th day.) Public comments can address a number of issues and can be both positive and negative.

The only people who are entitled in law to attend a public hearing are those who have sent in written comments but often the PAA will allow others also to participate. The PAA will invite every member of the public who has sent in comments during the commenting period. When a member of the public makes an oral presentation it should be clear, short and accurate. Evidence also can be led, according to the public hearing guidelines.

4. THE RIGHT TO INFORMATION

Essential to the process of pubic participation is the right to information possessed by citizens. The right to information is granted mainly by the Constitution however it is also included in the National Environmental Act. This section illustrates how the right is ensured during the process of public participation.

Upon receipt of an IEE or an EIA, the PAA should make a preliminary assessment of its adequacy as required by the TOR. If found adequate prima facie, the document should be open for public scrutiny for a period of 30 working days and must be so announced in the Gazette and in one newspaper in English, Sinhala and Tal. The 30 days will be calculated excluding public holidays and Sundays.

According to the Environmental Act, PAAs should establish procedures for making IEEs/EIAs readily available to the public for reading in Colombo and in the district or division in which the project is proposed. PAAs should establish an efficient process to allow copies of IEE/EIAs to be made of the public upon request subject to payment of the full reproduction costs by the requesting party or parties. PAAs should forward all comments received to the project proponents for review and response. Upon receipt of the project proponents written responses, the PAA should evaluate the responses before making a decision.

This shows that the right to information is accepted in the National Environmental Act and also by the Central Environmental Authority and by the government.

5. ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

The EIA Process was first introduced to Sri Lanka by the Coastal Conservation Act of 1981. Later in 1988 it was included in the National Environmental Act introducing the EIA process to the entire Island.

The National Environmental Act

Section 23(BB) of the National Environmental Act dictates that it shall be the duty of all project approving agencies to require from any Government department, corporation, statutory board, local authority, company, firm or individual who submits any prescribed project for its approval to submit within a specified time an initial EIA report as required by the project approving agency relative to such project and containing such information and particulars as may be prescribed by the Minister. In recognition of the importance of EIAs, in 1984 the government made them mandatory for development projects undertaken by both the public and private sectors. In 1988, EIAs became a legal requirement for the whole country through amendments to the National Environmental Act (NEA). However, the relevant provisions only came into effect in mid-1993.

The EIA process applies only to prescribed projects, which have been identified and detailed in a schedule under the provisions of Part IV C of the NEA, which was published in the Gazette Extraordinary, dated 24 June 1993. The basic considerations underlying the identification and listing of project activities, as "prescribed projects" are sensitivity and magnitude, since those factors are likely to cause adverse impacts on the environment. Such projects include *inter alia,* those which may have adverse impacts on natural resources, and those, which have a high pollution potential. Implementation of EIAs is conducted by the designated Project Approving Agencies (PAAs) Gazetted by the

Minister for Environment and Forestry. At present, several ministries and other state organizations have been specified as PAAs. The Central Environmental Authority (CEA) is the state agency charged with the responsibility for implementing the provisions of the NEA in regard to EIAs. The EIA practices and procedures of every PAA ensure that high-quality environmental information is available to concerned public officials, as well as other interest groups and the general public, before any decision is made and before the government makes any significant resource commitment that has an impact on the environment. To achieve the goal set in 3, a PAA must integrate EIA requirements with other planning and environmental review procedures required by law or by agency practice, so that all such procedures run concurrently rather than consequently. The PAA must also use the EIA process to identify and assess reasonable alternatives to proposed actions for avoiding or minimizing adverse effects on the quality of the environment. The major steps to be taken in conducting an EIA are preliminary information, environmental scooping, public participation, decision-making, and monitoring.

Definition and Contents of an EIA

An EIA is defined as "a written analysis of the predicted environmental consequences of a proposed project" [s 33 of the NEA]. The same definition has been included in the Coast Conservation Act and the 1993 amendment to the Fauna and Flora Protection Ordinance. The Southern Development Authority Act of 1996 also contains the same definition.

The following contents must be included in an EIA

1. A description of the proposed Prescribed Project (PP);
2. Prediction of Environmental Consequences of the proposed PP;
3. Avoidable and unavoidable adverse impacts of the PP;
4. Description of irreversible and irretrievable commitment of resources for the PP;
5. Alternatives to the proposed PP;
6. Reasons why these alternatives were rejected; and
7. An environmental cost / benefit analysis, if one has been prepared.

According to the definition of EIA, the EIA process is envisaged for individual projects. Every Prescribed Project, whether undertaken by the Government or a private proponent must undergo the EIA process. Prescribed Projects were listed in the Gazette Notification No 772/22 of 24th June 1993, and will be implemented through designated Project Approving Agencies (PAAs) as prescribed by the Minister under s 23 Y of the NEA in Gazette Extra Ordinary No 859/14 of 23rd February 1995. Under s 23 CC of the NEA, regulations have been made by the Minister stating the procedures that should be followed in order to achieve the EIA requirements of the NEA.

The Central Environmental Authority (CEA) as the agency charged with the responsibility of implementing the above provisions of the NEA, will promptly advise the PPAs of any amendments to the NEA relevant to Part IV C and/or the orders and regulations included in Gazette Extra -Ordinary No 772/22 of 24th June 1993.

The National Environmental Act has identified two levels in the EIA process.

1) Initial Environmental Examination (IEE)

IEE is a report in which possible impacts of a prescribed project are assessed with a view to determining whether the impacts are significant or not. An IEE must address the possible impacts and the intensity of such impacts.

2) EIA

EIA is a more comprehensive report whereby alternatives to the proposed project are considered and the option with the least impact on the environment identified and assessed. Mitigation measures for the impacts identified as significant are part of an EIA. An environmental cost benefit analysis is also undertaken wherever possible.

The EIA Process

The timing of the IEE/EIA is crucial if it is to become a useful tool in decision making. If the timing is late then many important decisions would have been made. Project proponents are thus advised to come within the EIA process at a very early stage in the project cycle.

There are 5 major steps in the EIA process:

1. Preliminary Information. A project proponent is required to give the PAA preliminary information on the proposed PP as early as possible. The preliminary information submitted should be comprehensive and may even suffice to be considered as IEE.
2. Environmental scooping is the process of identifying the important issues, which must be addressed in detail in the IEE/ EIA.
3. Public participation. It is one of the most crucial aspects of the EIA process. The Provisions for public participation are contained in the NEA.
4. Decision making. According to the regulations, the PAA shall grant approval for the project subject to specified conditions or refuse approval for the implementation of the project with reasons for doing so.
5. Monitoring. The success of the EIA process would be totally negated if the conditions imposed by the P AA were not effectively monitored.

The Central Environment Authority has prepared guidelines for implementation of the EIA process in three volumes. (1) A General Guide for Project approving Agencies (PAA) (2) A General Guide for Conducting Environmental Scooping. (3) Public Participation Handbook. In addition to these, several sectoral guidelines have been prepared by the CEA. The CEA has also prepared guidelines for an Extended Benefit Cost Analysis.

An EIA report must be in a recommended format. Agencies should use a format for EIAs that will encourage good analysis and clear presentation of the alternatives including the proposed action.

The text of EIA (excluding appendages) should normally be less than 50 pages. For proposals with unusual scope or complexity it should normally be no more than l00 pages. An EIA should be written in plain language and may use appropriate graphics so that decision makers and the public can readily understand them. EIAs may be written in English, Tamil or Sinhala and it is advised that it be made available in Sinhala.

After an EIA is prepared, the project proponent must submit it to the PM who must check its adequacy against terms of reference [EIA Regulation II (i)]. In the case of an IEE there is no such requirement to check the adequacy. If the PM is not satisfied with the EIA, then it should ask the project proponent to make the necessary amendments and resubmit it [EIA regulation II (ii)]. The PM must thereafter publish notice in the Gazette and in daily newspapers in all 3 languages inviting the public to inspect and make comments on the EIA /IEE within 30 days [NEA s 23BB(2) read with EIA Regulations 8(ii) and 12(ii)]. These costs are to be pre-estimated and collected before scooping as administrative charges from the project proponent [EIA regulations 7 (iii)]. The notice should say where and when the EIA /IEE can be inspected [NEA, section 23BB(2) read with EIA regulations (iii) and 12(ii)]. Once the public comment period is over the PM must decide whether the case warrants a public hearing [NEA, section 23BB(3)]. At the conclusion of the hearing and/or comment period, the PM must send the project proponent for review and comment [EIA regulations 12 and 9(i)]. When the response is received, the PM has seven days in the case of an IEE and 30 days in the case of an EIA to make its final decision [EIA regulations 10 & 14].

In the case of an IEE, the Prime Minister can grant approval with conditions or refuse approval (giving reasons) or call for an EIA where significant impacts are disclosed [NEA regulations 10]. In the case of an EIA, the PM can grant approval with conditions or refuse approval with reasons [EIA regulation 14].

When the PAA approves a project proposal with or without conditions, a notice of this fact must be published in the Gazette and in the daily newspapers in the three languages [NEA, Section 23BB (4) read with EIA regulation 17]. The approval remains valid for 24 months [EIA regulation 18], where approval is refused the project proponent has a right to appeal to the Secretary of the Ministry of Environment [NEA s 23 DD read with EIA regulation 15]. There is no time limit fixed for the appeal and therefore, it may be lodged within a reasonable period of time. The appeal must be in writing and the Secretary may hear the appellant in support of his appeal. The Secretary can confirm, reject or modify the P AA’s decision.

Macro Level EIAs

The project -oriented focus of the EIAs process could be considered as a drawback in the process. Because EIAs are prepared for individual projects, the cumulative impacts of projects could be overloaded. It is desirable to prepare EIAs at the strategic level on a regional basis once development projects for a particular region have been identified.

Though NEA envisages the preparation on EIA reports for individual projects, it does not rule out macro-level planning or the preparation of ElAs on a macro level. On the contrary, the NEA itself requires the preparation of a land use scheme for Sri Lanka.

Concerning macro level EIA planning, the word 'effects' in the definition of an EIA in Article 33 of the NEA could be interpreted as including 'cumulative environmental effects'. The guidelines prepared by the CEA for implementation of the EIA process recognize the importance of discussing the cumulative impacts of Projects where the impacts of individual Projects may be insignificant, but cumulatively may give rise to significant impacts.

The individual project base EIA process can overlook the overall consequences or the cumulative impacts of the activities. This seriously undermines the important role played by EIAs as a tool to achieve sustainable development

6. STRATEGIC ENVIRONMENTAL ASSESSMENT

Sri Lanka also has accepted in principle the concept of Strategic Environmental Assessment (SEA). SEA is defined as "a systematic process for evaluating the environmental consequences of proposed policy, plan or program initiatives in order to ensure they are fully included and appropriately addressed at the earliest appropriate stage of decision making on par with economic and social considerations."

While the typical focus of EIA is at the project level, the SEA is not project focused. It focuses on development plans and programs within a specific sector such as energy plans, irrigation schemes and transportation plans. SEAs also focus on issues and impacts in a distinctly spatial setting i.e. plans for development and management of provinces, cities, river basins and watersheds. SEAs also focus on policy impact assessment such as broad development and resource management policy at the national or regional level, i.e. national industrial siting policy, wetlands protection policy and recycling policy.

SEA has the following advantages:

a) Environment is an inherent component of SEA along with economic and social considerations rather than simply a constraint;

b) SEA directly integrates environmental concerns into the formulation of policies, plans and program development;

c) SEA facilities consultation among government agencies and regulatory bodies with potentially overlapping jurisdictions;

d) SEA enhances meaningful public involvement in the plan formulation stages of decision making rather than as a late stage formality;

e) SEAs make possible more effective analysis of potential cumulative effects of both large and small projects;

f) SEAs involve consideration of policy, siting and decision alternatives that are often ignored or not feasible during EIA;

g) SEA helps to focus the TOR for subsequent project level EIA and may sometimes replace full-scale project level EIA.

It could be concluded that environmental management at the policy planning level is indeed necessary for achieving sustainable development. However if this is accepted questions remain such as: who has the responsibility to carry out such assessment? Who should review them? What are the advantages that such an assessment will have for future proponents carrying out EIAs for individual projects? Should the law be amended to legalize the SEA process or should it remain as an administrative tool? And should there be public participation in this process?

7. STANDARDS

Section 10 of the National Environmental Act requires that the Central Environmental Authority specify environment standards, norms and criteria for the protection of beneficial uses of the environment and for maintaining the quality of the environment.

Under Part IV the authority in consultation with the Council shall:

- recommend to the Minister the basic policy on the management and conservation of the country's natural resources in order to obtain the optimum benefits and to preserve the same for future generations and the general measures through which such policy may be carried out effectively;

- with the assistance of the Ministry of the Minister in charge of the subject of Lands, formulate and recommend to the Minister a land use scheme;

- with the assistance of the Ministry of the Minister in charge of the subject of Fisheries, recommend to the Minister a system of rational exploitation of fisheries and aquatic resources within the territorial waters of Sri Lanka, or within its exclusive economic zone, or within its inland waters and shall encourage citizen participation therein to maintain and enhance the optimum and continuous productivity of such waters;

- with the assistance of the Ministry of the Minister in charge of the subject of wildlife conservation, recommend to the Minister a system of rational exploitation and conservation of wildlife resources and shall encourage citizen participation in such activities;

- with the assistance of the Ministry of the Minister in charge of the subject of Forestry, recommend to the Minister a system of rational exploitation of forest resources, regulation of the marketing for threatened forest resources, conservation of threatened species of flora and shall encourage citizen participation therewith to keep the country's forest resources at maximum productivity at all times; and

- with assistance of the Ministry of the Minister in charge of the subject of soil conservation, recommend soil conservation programs including therein the identification and protection of critical watershed areas, encouragement of scientific farming techniques, physical and biological means of soil conservation, and short term and long term research and technology for effective soil conservation.

Standards were introduced to the Sri Lankan Government by the National Environment Act No 47 of 1980 as amended by Act No.56 of 1988. The Gazette notification of 2nd February 1990 published those general standards for: discharge of effluents into inland surface waters; tolerance limits for industrial effluents discharged on land for irrigation purpose; tolerance limits for industrial and domestic effluents discharged into marine coastal areas; tolerance limits for effluents from rubber factories discharged into inland surface waters; and tolerance limits for effluents from the tanning industry.

These standards should be followed by the industries whenever they discharge substances into the environment.

Regulation 2

Regulation 2 of the Gazette notification states: "No person shall, on or after the relevant date discharge, deposit or emit or cause pollution or cause noise pollution, except,

(a) under the authority of a licence issued by the Central Environmental Authority; and

(b) in accordance with the standards and criteria specified in Scheduled I hereto;

A licensee who does not conform to the standards on criteria specified, may be directed to implement a program of action within specified period, at the discretion of the Authority, so as to conform to the standards and criteria and to observe certain conditions. A licensee shall, so long as he observes such conditions, be deemed to comply with the preceding provisions of this regulation.

Regulation 3
Regulation 3 states: "Not withstanding anything contained in Regulation 2, the Authority may, by a direction issued under Regulation 13 (13- Every applicant or every holder of licence shall comply with any direction given by or on behalf of the Authority for the purpose of protecting the environment), impose more stringent standards and criteria than those specified in Schedule I hereto in respect of any particular industry operation or process, having environmental impact."

Regulation 4
According to Regulation 4: "where an activity in respect of which an application for a licence is made is not covered by the standards and criteria specified in Schedule I hereto, the Authority will decide on such application on its merits and the applicant shall comply with all such directions as may be issued to him by the Authority for the protection of the environment."
Hence when a person/licensee does not work under the standards, the Authority could stop their license or they can fine them according to the regulations of the National Environmental Act.

8. TRADE STANDARDS

The conclusion in 1994 of the Uruguay round of multilateral trade negotiations and the establishment in 1995 of WTO as a successor to the General Agreement on Tariffs and Trade imposed stringent conditions which impacted on the trade of signatory countries. Furthermore, under the agreement the WTO is empowered to prohibit the trade of goods, which are not produced under acceptable sanitary standards.

The use of trade policies as a means of achieving environmental objectives has become a highly controversial issue, since developing countries argue that the imposition of such standards could be a subtle means of imposing non-tariff barriers on their exports. Nevertheless, the environmental concerns of the developed countries also provide new opportunities for developing countries like Sri Lanka. One striking example is the relatively high-value, environmentally friendly organic products demanded by consumers in developed countries.

Technical Barriers to Trade

Sri Lanka like other WTO members is also bound by the Agreement on Technical Barriers to Trade (TBT) and is obliged among other things, to circulate full information on standards, technical regulations and conformity testing procedures among the other members. Furthermore, the new TBT agreement includes the Code of Good Practice for the Preparation, Adoption and Application of Standards which contains important provisions dealing with the development of standardization, in which information services also have an important role to play.

ISO Standards

The WTO has also recognized the importance of ISO certification and has urged governments to make the broadest possible use of international standards with a view to facilitating the free circulation of goods. It is also encouraging its members to actively participate in international standardization.

- **ISO 3720**

In that context it is pertinent to state that Sri Lanka has adopted the Black Tea Standard, ISO 3720, as the Sri Lankan standard equivalent, which ensures that the technical parameters and quality requirements are the same. Although the Sri Lanka Standards Certification Scheme has been implemented by SLSI for certain non-traditional products, it does not apply to tea, as SLTB with assistance from SLTRB carries out checks on tea shipments to ensure that the product conforms to international standards. As a result, Sri Lankan teas have gained the reputation of being among the cleanest teas in the world. However, with respect to ISO 9000 quality certification, the Sri Lankan tea industry is facing certain constraints due to the unavailability of professional assistance for the installation of ISO 9000 quality management systems.

- **ISO 9000**

SLSI is one of several accredited bodies in Sri Lanka for granting certification of ISO 9000 quality management systems, and it has so far certified 18 companies which have installed such systems covering all sectors. However, according to available information, the tea sector has received barely any certification.

Although several private sector consultancy firms provide services for the installation of ISO 9000 quality management systems, they do not appear to have the necessary expertise for providing adequate support to the tea sector. According to available information, SLTRB has been slow in filling that gap through the development of appropriate procedures and manuals for installing such systems.

In order to comply with the hygienic standards and procedures required by the European Union for food imports, the early adoption of ISO 9000 systems and procedures by the tea sector is imperative.

- **ISO 14 000**

In addition to the above considerations, increased awareness of the urgent need to protect the environment is catalyzing changes in all spheres of human activity including the production, marketing, utilization and disposal of goods and services in domestic and international markets. Consumers and retailers are increasingly basing their purchasing decisions not only on the key aspects of quality, price and availability of goods, but also on the environmental aspects associated with the products, such as the environmental impacts that might occur from the raw material stage to actual production. In that context, the ISO 14000 series of environmental standards reflect the increasing concern of the international community for the preservation of the environment, as they relate

specifically to the steps that enterprises need to take in meeting internationally accepted environmental management criteria.

Compliance with the ISO 14000 series will increasingly be a competitive factor in international trading. It is therefore receiving the widespread attention, including that of producers and exporters of commodities such as tea, and government agencies such as SLSI. Although SLSI is still not an accredited body for ISO 14000, 16 of its staff members have been trained and registered with IQA in the United Kingdom of Great Britain and Northern Ireland as Environment Management Systems (EMS) auditors. Hence, SLSI certification has validity. However, the development of EMS related to the ISO 14000 series is at the embryonic stage.

Eco-Labelling Schemes

A number of countries, including competitors of Sri Lanka, have implemented eco-labelling schemes. Thus eco-labelling (also known as green labelling or environmental labelling) is now one of the most important international trading issues that is facing the tea industry. In Sri Lanka a recognized certification body as well as a scheme to offer a registered eco-label are needed. However, the costs related to securing an eco-label or, for that matter, certification under other related schemes is bound to be a contentious issue, in terms of the ability of products to remain price competitive in international markets.

However, a healthy development is the increasing interest among the producers and exporters in the production of environmentally preferable (organic) food products. In the tea sector the production of organic teas (although still in limited quantities) has been undertaken by a few producers and exporters, more as a challenge and in response to demand and premium prices in the niche markets.

9. OTHER STATUTORY TOOLS

New initiatives have been adopted under the draft National Environmental Protection Act (NEPA) and a draft Forest Conservation Act for environmental management and resource conservation. The United National Environment Program (UNEP), Nairobi, supported the drafting of NEPA. Both these laws are in draft form and the draft NEPA is before a Cabinet subcommittee. The NEPA is a comprehensive law which updates existing legislation and introduces many new concepts including the “polluter pays” principle, environmental tribunals, enforceable rights to a healthy environment, administrative penalties, green marking etc. The new Forest Conservation Act contains provisions for tenure agreements between communities and the Government and re-orients the classification and regulation of forests in keeping with modern trends.

New institutions for environmental management were not established until the 1980s. The Central Environmental Authority (CEA), the apex environmental agency was established by the National Environmental Act (NEA) in 1980. Its functions include environmental standard setting, pollution control and environmental planning including EIA. In the early

l990s a Cabinet Ministry for the Environment was established and has since functioned as the national environmental planning and policy-making body. In 1981 the Coast Conservation Act established the Coast Conservation Department with primary responsibility for prevention of coastal erosion and management of the coastal zone. The Fisheries Department oversees the management of both inland and marine fisheries resources. It currently operates under the Fisheries Act of 1996. Marine pollution falls within the authority of the Marine Pollution Prevention Authority (MPPA) established by the Marine Pollution Prevention Act of 1981. The National Conservation Strategy was adopted in December 1988. Following the Strategy a National Environmental Action Plan (NEAP) was adopted in 1991. Certain actions from the NEAP have been identified and developed into the Environmental Action 1 Project (EA1P), which was funded by the World Bank beginning in 1997.

9. CONCLUSION

Statutory tools aim to enforce and regulate the laws of Sri Lanka. They set standards, require that assessments be completed and facilitate the regulation of industries and projects that affect the environment. One of the major tools currently used in Sri Lanka is the EIA process. Outlined above this process has been praised as an effective way to predict the outcomes of a project, thereby facilitating the achievement of a suitable balance between environmental conservation and economic progress. Of particular significance to this praise is the inclusion of provisions for public input, supported by the public's enforceable 'right to know'. Conversely the EIA process has also been the target of criticism. Ultimately it is held that EIAs are poorly implemented. Furthermore the provisions for public input require strengthening; currently public opinion 'may' be taken into account it may also however, be ignored.

Discussion in the preceding chapter also turns to the advent of the SEA process defined as "a systematic process for evaluating the environmental consequences of proposed policy, plan or program initiatives in order to ensure they are fully included and appropriately addressed at the earliest appropriate stage of decision making on par with economic and social considerations." This is held to have many advantages over EIAs however as noted, many essential questions regarding the implementation of the tool remain unanswered.

Overall the effectiveness of statutory tools is constantly negated by the fact that from the viewpoint of industries and developers they are seen as a hindrance. Licensing and permitting incur costs, EIAs are time consuming and may affect the plans of a project and standards could be perceived as mere burdens. Ultimately as long as the statutory tools of Sri Lanka are perceived as burdensome, they will be undermined and circumvented, their effectiveness impaired. The draft NEPA may hold the key to solving the problems of enforcement of statutory tools. The draft Act aims to update existing laws and the introduction of the "polluter pays" principle and environmental tribunals may improve the effectiveness of the current tools. However until such problems are addressed, the enforcement problems that plague Sri Lanka's legislation and
statutory tools will persist.

CHAPTER XVI

MULTILATERAL ENVIRONMENT AGREEMENTS AND THEIR IMPLEMENTATION

Key Issues: Implementation; Technology Transfer; Inbuilt Funding Mechanism; Synergy with other Agreements; Informed Negotiations, Education and Awareness; Enforcement and Compliance.

Domestic Legislative Measures: National Conservation Strategy 1988; National Environmental Action Plan 1994; National Environment Act 1980; National Environment (Amendment) Act 1988; Control of Pesticide Act 1980; Coast Conservation Act 1981; Coast Conservation (Amendment) Act 1988;Marine Pollution Prevention Act 1981; Fisheries and aquatic resources Act 1996; Forestry Ordinance; the Flora & Fauna Act; the Fisheries Act; National Environmental (Protection and quality) Regulation 1990.

Key Institutions: Ministry of Environment and Natural Resources; Central Environmental Authority Department; Department of Wildlife Conservation; Coastal Conservation Department; National Environmental Steering Committee; Metrological Department; Ministry of Agriculture, Lands and Forestry; Natural Resources, Energy and Science Authority; Ministry of Fisheries and Aquatic Resources; Ministry of Transportation; Sri Lanka Standards Institute.

1. INTRODUCTION

Sri Lanka has shown significant dedication to the ratification of international agreements. This chapter list the numerous agreement so to which Sri Lanka is a party, however the substance of the chapter is dedicated to a detailed discussion of five major international agreements. Recent developments, institutional movements and areas in which Sri Lanka is struggling are among the issues described. The agreements discussed are: The Convention on International Trade in Endangered Species of Wild Fauna and Flora; The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal; the Montreal Protocol on Substances that Deplete the Ozone Layer; the Framework Convention on Climate Change and; the Uruguay Round Multilateral Trade Agreement of the World Trade Organisation.

Sri Lanka has created a well-developed institutional infrastructure to implement these conventions and protocols. For example the Government has set up an Inter-ministerial Coordinating Committee on Climate Change for implementation of the Framework Convention on Climate Change. This committee in turn appointed a steering committee for the purpose of preparing a National Action Plan on Climate Change for achieving the

objectives of the Convention. In addition, a Montreal Protocol Unit was established within the Ministry of Environment to coordinate matters related to the Protocol.

2. LIST OF AGREEMENTS SIGNED AND RATIFIED

- Vienna Convention on Substances that Deplete the Ozone Layer 1985; and the subsequent
- Montreal Protocol on Substances that Deplete the Ozone Layer 1987 (ratified on 15 December 1989);
- Bonn Convention on Migratory Species 1989;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora 1973 (CITES);
- London Amendment 1990 (ratified on 16 June 1993);
- Copenhagen Amendment 1992 (ratified in July 1997);
- Ramsar Convention on Wetland of International Importance Especially as Waterfowl Habitat 1971;
- Convention Concerning the Protection of the World Cultural and Natural Heritage 1972;
- Convention on the Conservation of Migratory Species of Wild Animals 1979 (CMS);
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal 1989;
- Convention on Biological Diversity 1992;
- United Nations Framework Convention on Climate Change 1992 (ratified on 23 November 1993);
- United Nations Convention to Combat Desertification 1994;
- United Nations Convention on the Law of the Sea 1982;
- Convention on early notification of a nuclear accident
- Agreement on the Network of Aquaculture Centers in Asia and the Pacific;
- Convention on the Prohibition of the Development, Production, Stockpiling and use of Chemical Weapons and on their Destruction;
- Agreement for the establishment of the Indian Ocean Tuna Commission 1993;
- International Plant Protection Convention;
- International Convention for the Preservation of Pollution of the Sea by Oil (as amended);
- Marine Pollution Prevention Authority Plant Protection Agreement for Asia and Pacific Region (as amended);
- Convention on the Continental Shelf;
- Convention on Fishing and Conservation of the Living Resources of the High Seas;
- Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water;
- Treaty on principles governing the activities of states in the exploration and use if

Outer space including the moon and other celestial bodies;

- International Convention on Civil Liability for Oil pollution Damage (as amended);
- International Convention Relating to intervention on the high seas in cases of oil pollution casualties;
- Convention on the prohibition of the development, production and stockpiling of bacteriological (biological) and toxin weapons and on their destruction;
- Convention on the prohibition of military or any other hostile use of environmental Codification techniques;
- The International Convention for the Prevention of Pollution from the ships (MARPOL) 1973;
- Bio-safety Protocol 2000;

The remainder of this chapter, broken up in to five sections discusses five major international agreements. The discussion focuses on Sri Lanka's implementation of the agreements and their progress in comply with their various obligations under the agreements.

3. CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA 1973 (CITES)

Sri Lanka's Biodiversity (see also Chapter X)

Sri Lanka is one of the few countries in South Asia to possess such a wealth of biodiversity. Available information shows that Sri Lanka's biodiversity per unit of land area is among the highest in South Asia. This is exceptional given that the diversity of the country's biological resources has not yet been fully surveyed.

Within a land area of 25 000 sq. miles, this rich biodiversity is distributed within a wide range of eco-systems varying from rainforests to grasslands, freshwater bodies, wetlands and rivers, and coastal and marine eco-systems. An important feature of the climate is that there are two basic eco-zones: a wet zone and a dry zone. Since these two zones are not sharply distinct, there is also what may be termed, an "intermediate" zone gradually merging into the wet and the dry zones. These climatic conditions and the panorama of natural eco-systems in the country support over 3800 species of flowering plants, of which 23% are endemic and 314 species of fern and derivatives of the fern family. Species diversity is also high among mosses and fungi. In addition, the country has a high faunal diversity. Conservation and sustainable use of these resources based on the indigenous knowledge systems and practices is ingrained in Sri Lanka's ethos and way of life.

Legislation

Major legislative enactments on the biological resources of Sri Lanka are the National Environmental Act 1980, Forest Ordinance, The Flora and Fauna Protection Ordinance, National Heritage Wilderness Areas Act, Botanic Gardens Ordinance, Fisheries and Aquatic Resources Act, the Plant Protection Ordinance and the Customs Ordinance. The concept of environmental protection is also enshrined in the country's constitution.

Biodiversity Action Plan

The preparation of the Biodiversity Action Plan was undertaken in response to Article 6 of the Convention (CITES). While consolidating the ongoing efforts of conservation and sustainable use of biological diversity, the Action Plan aims at establishing a policy and program regime, which brings national action to various aspects of the subject, including capacity-building and bio-safety measures in tune with the articles of the Convention.

The Government is to adopt this National Biodiversity Action Plan for the conservation and sustainable use of these resources in the near future. Wildlife preservation, in the form of zoos and national farms, is used for the *ex-situ* preservation of wildlife. Also, efforts are being made to strengthen the legislative framework to derive maximum benefit from biotechnology while minimizing its risks. The lack of technology and technical capacity, as well as financial constraints, have weakened the national efforts to protect biodiversity.

Decision-Making Structure

The Ministry of Forestry and Environment is responsible for policy-making with the approval of the Cabinet. A network of over 100 NGOs has been built up and biodiversity focal points have been established in development ministries and agencies to get environmental advocacy in formulating biodiversity policies.

The developed countries should ensure that benefits of biotechnology accrue to the biological resource's country of origin; these benefits are to include royalty payments and transfer of technologies to the countries of origin in accordance with the provisions of the Convention.

It is also necessary to develop an internationally recognized regime for recognizing the property rights, both intellectual and physical of the local communities. The capacities of biodiversity-rich countries should be built up to enable them to carry out bio-prospecting and undertake technology assessment for protection of their resources. The introduction of transgenic and alien species should be only with the requisite safeguards.

Capacity-Building/Technology Issues

Attention is given to institution building including capacity-building, and developing bio-safety measures in keeping with the articles of the Convention. Sri Lanka is trying to build up a biotechnology information network and capacity in the area of taxonomy. The facilities for cryo-preservation of germ plasma in the country are very limited. The Plant Genetic Resource Centre at Peradeniya is the only institution with such facilities and only a fraction of the range of the agricultural germ plasma available in the country is stored at this centre. It is necessary to build capacities and develop programs for gaining a better understanding of the different components of the country's biodiversity. The country's capacity in the area of taxonomy needs to be built up. The opportunities available for training in this area are also limited.

Regional/International Cooperation

There is regional and national cooperation for technology transfer, capacity-building and for the exchange of information. The SAARC countries cooperate in identifying regional issues and taking regional and international measures for the conservation and sustainable use of biological resources. However national action regarding conservation and sustainable use of biodiversity and an equitable share of benefits, demands contributory action on the part of the international community, particularly the developed countries.

4. THE BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL

Sri Lanka ratified the Basel Convention in August 1992. The Ministry of Forestry and Environment is the focal point and the Central Environment Authority is the Competent Authority for this convention.

Regulations and Guidelines

The Ministry of Environment published the regulations for the internal management of hazardous waste in 1996. Regulations for the transboundary movement of hazardous waste are being formulated and will be brought into operation under the Import and Export Control Act. Guidelines are being prepared for the safety measures to be adopted during collection, transportation, storage, recovery, recycling and disposal of hazardous wastes.

National Action Plan for Clinical Waste Management

A project under World Bank funding was completed to establish an inventory of hazardous waste, the current disposal practices in Sri Lanka and also to carry out a pre-feasibility study to identify and rank suitable hazardous waste disposal sites. Arrangements are being made to prepare a National Action Plan for Clinical Waste Management.

Decision-Making Structure: The National Coordinating Committee for the Implementation of the Basel Convention, chaired by the Secretary, Ministry of Forestry and Environment.

Capacity-Building/Technology Issues

Due to the high cost of, and inadequate accessibility to environmentally sound technology and the level of technical capacity required to select, maintain and use the proper technology, industries find it difficult to comply with the hazardous waste regulations. The capacity of the regulatory bodies is also inadequate in ensuring the effective implementation of the new hazardous waste regulations.

List of Major Groups:

The Ministry of Forestry and Environment; Central Environmental Authority; Ministry of Shipping, Ports, Rehabilitation and Reconstruction; Ministry of Trade, Commerce and Food; Ministry of Planning Ethnic Affairs and National Integration; Ministry of Labour and Vocational Training; Ministry of Defence; Ministry of Health and Indigenous Medicine; Ministry of Science, Technology and Human Resources Development; Ministry of Industrial Development; Marine Pollution Prevention Authority; Federation of Chamber of Commerce and Industries of Sri Lanka; Ceylon Chamber of Commerce; Board of Investment of Sri Lanka; Ceylon Fertilizer Corporation; Sri Lanka Ports Authority; Pesticide Registration Office; Sri Lanka Customs; Government Analyst Department; Ceylon Institute of Scientific and Industrial Research; Import and Export Control Department.

Finance

Sri Lanka lacks financial assistance for the efficient implementation of the Basel Convention. Particularly, financial assistance is essential to build the capacity of the country to employ hazardous waste management, including establishing hazardous waste disposal facilities.

5. MONTREAL PROTOCOL ON SUBSTANCES THAT DEPLETE THE OZONE LAYER

The Ministry of Environment and Forestry is the focal point for all environmentally related international agreements, and it has set up a Montreal Protocol Unit within its own organizational structure to coordinate all matters relating to the Protocol..

At a meeting of the parties to the Protocol held in 1995, the time target applicable to developing countries for phasing out ozone depleting substances (ODS) such as chlorofluorocarbons (CFCs), carbon tetrachloride (CTC) and methyl chloroform has been set as the year 2010. For hydro chlorofluorocarbons (HCFCs), which have an ozone-depleting potential of only 5 to 11 per cent of that of CFCs, the time target has been set as the year 2040. Also, amendments introduced to the Protocol in 1992 have increased the list of HCFCs to 40, while a list of 34 new substances called hydrobromofluorocarbons

(HBFCs) and another new substance, methyl bromide, have been included. In Sri Lanka, methyl bromide has applications in the tea sector.

Although adequate time is available before 2010 for developing countries to begin phasing out consumption of ODS, Sri Lanka has taken measures to phase ODS out earlier because it is economically advantageous to do so. Also, time targets for phasing out ODS have to be set in order to obtain assistance from the Multilateral Fund for technology transfer and investments necessary for implementing the changeover. Furthermore, time targets are necessary for the trade and industry sectors to plan their strategies for changing over to new technologies. Therefore the Ministry of Environment and Forestry has prohibited the use of CFCs, CTC and methyl chloroform in trade and industry after 1 January 2000, except for the purpose of servicing equipment, which is allowed until 1 January 2005. The current consumption of CFCs in Sri Lanka is of the order of 350 tons annually and is used mainly in the refrigeration sector.

Coordinating the implementation of that aspect of the Protocol with the refrigeration and air-conditioning industry and the trade sector takes place through the Inter-ministerial Committees that function in the Ministry of Environment and Forestry, and encompasses the Ministry of Industrial Development, Science and Technology and the Ministry of Internal and International Commerce and Food.

The consumption in developed countries of methyl bromide, which is widely used in agriculture to fumigate soils and grains, was frozen in 1995 and is due to be banned by the year 2010, with an exemption granted for quarantine and pre-shipment applications. However, in the case of developing countries, consumption of methyl bromide will not be frozen until the year 2002, with an exemption given for critical agricultural applications. In view of its application in agriculture, no decision has been taken yet on a complete ban in the case of developing countries.

In Sri Lanka methyl bromide is used because of its versatility in controlling a wide spectrum of pests, pathogens, insects and nematodes. It also has sufficient phytotoxicity to control many weeds and seeds. As a result of its efficacy, it is used in pest control (basically in stored products), on the tea plantations and for plant quarantine mainly at ports and airports to fumigate export and import cargo. Its annual consumption totals about 60 tons divided approximately equally between the tea sector and other uses. It is used by the tea sector for fumigating soils to control soil-born pests as well as diseases in nurseries. The product is recommended for use by SLTRB.

Apart from having an adverse impact on the ozone layer (its ozone depleting potential is 0.6 that of CFCs), methyl bromide is extremely hazardous to humans and animals as it causes eye and skin burns on contact. Since it is a pesticide, in Sri Lanka its use is controlled by the Control of Pesticides Act. As such, methyl bromide imports, storage, labelling, transport, sales and use are regulated through a registration procedure. No person is allowed to undertake any of the above activities unless registered. Upon registration, the Registrar of Pesticides issues a licence detailing relevant restrictions and

conditions to ensure safe and effective use. Furthermore, since it is identified in Sri Lanka as one of the restricted pesticides it cannot be sold on the open market. Registered persons are allowed to import methyl bromide with the prior approval of the Registrar of Pesticides and to issue the product directly to authorized users. The Registrar identifies users based upon the intended specific use, as well as the facilities and expertise available to them.

According to the Montreal Protocol, methyl bromide could continue to be used in developing countries until alternatives are developed for agricultural applications. However, in addition to setting time targets for the ban on manufacture and import of ODS, the Montreal Protocol has also imposed restrictions on their trade. Therefore, developing countries like Sri Lanka, which depend on imports of such products from developed countries, will still encounter constraints for its continued use. As a consequence of this the Ministry of Environment and Forestry has already begun seeking alternatives to methyl bromide for use in the tea sector. However it is proving difficult to find alternatives to methyl bromide due to its convenience and wide application. It is quite penetrative and effective even at low concentrations and its action is sufficiently rapid in treated systems to cause relatively little disruption to commerce, especially crop production. Difficulties in finding alternatives have already been reported by a Methyl Bromide Technical Options Committee, which was established by the parties to the Montreal Protocol to review the technical issues concerning the chemical.

According to the Methyl Bromide Technical Options Committee, several potential alternatives have been identified including fumigants and non-fumigants. However the environmental and health considerations that limit the use of any pesticide need to be taken into account when selecting alternatives. Further regulatory restrictions on the use of agrochemicals are likely to occur, resulting in higher costs and increasing inconvenience. The costs of achieving full commercial registration of unregistered material are high and the process is slow. The rapid introduction of alternatives also faces specific constraints associated with the time taken to gain registration as well as regulatory acceptance of some procedures. Regarding the treatment of exports to meet quarantine standards, the problem becomes even more acute as extensive trials and protracted bilateral negotiations are often required.

Although the SLTRB has recommended alternatives to methyl bromide they do not appear to have been taken up, perhaps because of their specificity to particular applications. In that respect, the tea sector faces a number of constraints when adopting entirely new alternatives related to registration procedures etc. under the Pesticides Control Act.

To achieve the national policy objectives of phasing out ODS under the Montreal Protocol, a significant constraint has arisen in relation to the Multilateral Fund. When the London Amendment to the Montreal Protocol was being negotiated in 1990, the Multilateral Fund was established on the insistence of developing countries, without imposing any conditions for disbursement of the funds. However in submitting recent

requests for funds, developing countries such as Sri Lanka have found that new criteria have been introduced, making it particularly difficult for countries with low volume consumption levels of ODS to benefit from the Multilateral Fund.

One such criterion is that projects are approved on the basis of their cost effectiveness, defined in terms of United States dollars invested per ton of ODS eliminated. Generally, the figure is high for low volume consuming countries such as Sri Lanka and therefore the projects receive low priority. In addition, the funds are disbursed for the transfer of technology at industry/trade level and not to direct users.

Even in the case of methyl bromide disbursements from the Multilateral Fund are generally not made for research on alternatives. The cost of finding alternatives including the necessary laboratory and field trials is quite high and is generally not funded by the Multilateral Fund. Currently the Ministry of Environment and Forestry is negotiating with other donor agencies to obtain funds for research work. The CEA has approved a research grant in local currency to SLTRB, to undertake research work related to the quest for alternatives. Those endeavors will be coordinated by the CEA and the Ministry of Environment and Forestry with SLTRB and the Ministry of Plantation Industries through the Inter-ministerial Coordinating Committee, in order to ensure the integration of policy objectives.

6. FRAMEWORK CONVENTION ON CLIMATIC CHANGE

The annual emission of several billion tons of Green House Gases (GHGs) mainly carbon dioxide, methane, nitrous oxide and CFCs into the atmosphere, principally from fossil fuels and biomass combustion as well as agricultural activities is expected to cause severe changes in the Earth's climatic system including global warming and a rise in sea level. To avoid such a disaster, and on the initiative of the World Meteorological Organization and the United Nations Environment Program, the international community adopted the Framework Convention on Climatic Change at the United Nations Conference on Environment and Development (Earth Summit) held in Rio de Janeiro in June 1992. Sri Lanka became a signatory to that Convention and ratified it in 1993. As far as Sri Lanka is concerned, the biophysical impacts of climate change will generally manifest themselves in almost every sector of the economy.

Impacts of Climate Change

In the agriculture and forestry sectors, there could be both direct and indirect impacts. Direct impacts will result from increased carbon dioxide levels, which affect photosynthesis, and rising temperature, which in turn causes heat stress and increased evapo-transpiration in crops. Indirect impacts will result from changes in moisture levels, an increased incidence of pests and growing spoilage of agro-products as a result of enhanced microbial activity. These effects could result in reduced yields and shifts in productivity.

Changes in rainfall patterns and increased temperature could have a direct impact on water resources leading to their decline in general. The patterns of floods, droughts, storms and cyclonic activity could change resulting in major implications with regard to the drinking water supplies, hydropower generation, irrigation activities and threats to life and property.

A rise in the sea level would have repercussions for coastal ecosystem management, aquaculture and urban water supplies as a result of enhanced salinity levels and the inundation of low-lying coastal areas. The latter problem would also affect the extent of beaches, beach erosion, river run-off, human settlements, coastal structures, highways and railways. Offshore effects are likely to include heightened growth of phytoplankton, declining fish yields and changes in marine migratory patterns.

Both human and animal health is also vulnerable to climate change. The incidence of the more common vector-borne diseases such as malaria and filariasis could increase. Other rarer vector-borne diseases such as encephalitis and dengue fever could also increase. In addition, frequent heat waves and freshwater shortages will take their toll.

According to the Sri Lanka country report on “Climate change in Asia” by ADB, assessing the impacts of future climate change is an undertaking filled with uncertainty. Although the rates of GHG increases are known, it is not known whether the rate will continue steadily. In addition the sensitivity of the climate to changes in GHGs is still unknown.

According to current climate change predictions for Sri Lanka, the effects of climate change by the year 2010 will be marginal, reaching only +0.50C for temperature increase and +5 per cent for evaporation/rainfall (wet season only). However, in the scenario for 2070, the changes become quite significant.

The trends also suggest that within the averages the intensity of dry weather and rainfall may increase. Therefore, climate change could have increasingly significant effects even in the 2010scenario. Studies on weather patterns and crop yields for the past years have shown that drought affects tea by reducing the yields. Moreover, irregular patterns of rainfall and high seasonal concentrations in the wet zone, with attendant increases in run-

off ratios, could result in soil erosion, land degradation and the loss of productivity in the tea industry.

The Framework Convention on Climatic Change was adopted with the objective of stabilizing GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Developed country parties (those listed in Annex 1 of the Convention) are required to reduce their GHG emissions to 1990 levels by the year 2000. However, there is no such requirement for developing countries (i.e., non-Annex 1 parties). Under the Convention, every party is required to submit a national communication to the Climate Change Secretariat before a stipulated date, including: (a) a national inventory of anthropogenic emissions and removals of all GHGs; (b) a general description of steps taken or envisaged to implement the Convention; (c) any other information (which may include technical and financial needs) relevant to achieving the objectives of the Convention.

Initiatives taken by Sri Lanka under the Framework Convention on Climatic Change

The Ministry of Environment and Forestry as the national focal point for implementing the Framework Convention on Climatic Change, appointed an Inter-Ministerial Coordinating Committee on Climate Change, chaired by the Secretary of the Ministry. The Committee has initiated bilateral programs with India and the United States of America and coordinated the preliminary study on climate change sponsored by ADB, as part of a regional program.

- **The Action Plan**

To achieve the objectives of the Convention, the Ministry of Environment and Forestry recognized that an action plan was needed which outlined the measures that the country planned to take in mitigating emissions and adapting to any adverse impacts. In early 1996, the Inter-ministerial Coordinating Committee appointed a Steering Committee for the purpose of preparing NAPCC. The Steering Committee chaired by the Secretary of the Ministry, comprises high-level representatives of several government agencies, universities etc.

As far as the plantation sector (including tea) is concerned, the Ministry of Plantation Industries is responsible for the task of preparing the sectoral plan. In undertaking the task, the Ministry will: evaluate plantation mitigation, vulnerability, and adaptation technologies and measures; prepare the plantation sector part of the action plan; and integrate it with other national plans. Other responsible Ministries are undertaking similar exercises for their specialized sectors.

In preparing the initial draft of the sectoral plans, each responsible ministry selects senior officers from the departments and institutions which are within their authority, and co-

opts specialists from other institutions such as universities and NGOs to form working groups to assist in the task.

The Ministry of Finance and Planning and the Central Bank of Sri Lanka are responsible for assessing the impact on the national economy and for developing policy measures on adapting to adverse impacts, in order to integrate climate change concerns into medium and long-term planning. The Ministry of Environment and Forestry coordinates all related activities, compiles the NAPCC based on inputs from individual working groups and prepares the national communication required under the Framework Convention on Climatic Change.

An initial workshop was held to apprise members of the working groups of the issues involved in climate change studies such as GHG inventories, vulnerability assessments, mitigation and adaptation measures etc. The workshop was open to other interested parties, both in the government and the private sector.

In assessing the technologies available for mitigation and adaptation, the various economic, environmental and social impacts are being given due consideration. The working groups select priority areas in each sector after consultations with all stakeholders in the through workshops and individual meetings. Efforts are also being made by the Steering Committee, through the Framework Convention on Climatic Change Secretariat, to obtain contact points overseas to facilitate technology transfer. The Steering Committee will provide inputs for the preparation of the first national communication.

The broad objectives of the NAPCC are:

- To identify and prioritize the mitigation and adaptation measures to be implemented by all State agencies concerned;
- To prepare Sri Lanka's first national communication required under the Framework Convention on Climatic Change;
- To conduct in-depth assessments of promising mitigation and adaptation technologies, and to formulate policies and strategies for promoting the deployment of the selected technologies;
- To develop policy measures aimed at minimizing the impacts of climate change and adapting for vulnerabilities;
- To develop project concepts for seeking financial support for the implementation of the NAPCC.

The ADB supported study on climate change identified the lacunae in current knowledge of climate change impacts in Sri Lanka. Therefore, as a follow-up measure, further studies have been carried out on:

- The preparation of the national inventory of GHG emissions and sinks;

- The measurement of emission factors for the emission of GHG during biomass combustion;
- The evaluation of mitigation options in the agricultural and energy sectors;
- A vulnerability assessment of coastal zone water supply and beach erosion;
- A vulnerability assessment of the incidence of malaria.

The above studies are being conducted by researchers attached to three universities, the Institute of Fundamental Studies and CISIR. The results of the GHG inventory will be utilized in identifying the mitigation options available to the various sectors. Furthermore, as a commitment under the Framework Convention on Climatic Change, the GHG inventory has to be updated periodically; hence the need to sustain this activity beyond the country studies program has been recognized. In addition, since the mitigation elements identified under the country studies program and vulnerability assessments cover only a few sectors, there is scope for further study.

- **The National Communication**

Based on the findings of the individual sections of the action plan, the Steering Committee will prepare the draft national communication. For that purpose, the Steering Committee will take into account the Framework Convention on Climatic Change Secretariat guidelines and format. The draft plan will be made available for public comment and subsequently discussed at a public seminar. The Steering Committee will then prepare the final version of the national communication for submission to the Climatic Change Secretariat. Its anticipated date of completion was the end of 1997.

The framework of the national communication was expected to include:

- A national inventory of anthropogenic emissions and removals of GHGs; Programs related to sustainable development, research and systematic observation, education and public awareness, training etc.; Policy options concerning adequate monitoring systems and response strategies for climate change impacts on terrestrial and marine ecosystems; Policy frameworks for implementing adaptation measures and response strategies in the context of coastal zone management, disaster preparedness, agriculture, fisheries and forestry, with a view to integrating climate change impact information, as appropriate, into the national planning process; Programs containing measures that would contribute to addressing climate change and its adverse impacts, including the abatement of increases in GHG emissions and the enhancement of removals by sinks; Project proposals for the removal of GHGs together with an estimate of all incremental costs to be incurred in the reduction of emissions as well as the consequent benefits.

- The financial and technological needs and constraints associated with communicating and further improving the national communication, including a reduction of the margin of uncertainty in emissions and the removal of variables

through appropriate institution-building and capacity-building; The financial and technological needs associated with the activities and measures envisaged under the Convention, according to national priorities; The financial and technological needs for carrying out an assessment of national vulnerability to climate change and for taking measures to facilitate adequate adaptation.

Since the implementation of the action plan requires substantial amounts of public funds, public support is utilized in determining priority areas, once the priority areas are identified, the Steering Committee will select those projects that may need support in developing full project proposals. Support by the public will also be solicited for the implementation of the plan through seminars and presentations in the electronic and print media.

- **Constraints**

The constraints faced by Sri Lanka in incorporating the issues pertaining to the Framework Convention on Climatic Change into domestic policy formulation relate to:

- The financial and technological needs associated with activities and measures envisaged under the Convention, according to national priorities;
- The financial and technological needs for the assessment of national vulnerability to climate change and for taking the necessary measures to facilitate adequate adaptation.

In that connection, technical assistance is required for:

- Introducing analytical tools for evaluating policy options, programs and technologies;
- Familiarization and study visits to climate change centers in developed countries;
- Utilizing the services of consultants for technology assessment and capacity building.

8. CONCLUSION

Sri Lanka's desire to conserve its environment and address the huge problems it currently faces has been assisted by its recent dedication to multilateral agreements. While generally the implementation of the Sri Lanka's obligations has not been encouraging this tendency is steadily changing and the institutional structures created to ratify Sri Lanka's obligations are at times portrayed as quite effective.

To ensure the effective implementation of the 31 environmental agreements Sri Lanka is party to, the relevant institutions must monitor the development of such agreements and more actively promote the needs of Sri Lanka in their negotiation. The adoption and implementation of such agreements must include adequate consultation with all relevant bodies within the country including ministries, department, agencies, public and private sector and NGO's. Without proper consultation and holistic coordination, implementation will deteriorate, and the value of such agreements will be defeated.

APPENDIX A

LIST OF ABBREVIATIONS

ACRONYM	MEANING
CEA	*Central Environmental Authority*
CISIR	*Ceylon Institute for Scientific and Industrial Research*
CITES	*Convention on International Trade in Endangered Species of Wild Fauna and Flora*
CLO	*Crown Land Ordinance*
CMT	*Commissioner of Motor Traffic*
CPC	*Ceylon Petroleum Corporation*
DFO's	*Divisional Forest Officers*
DWLC	*Department of Wildlife Conservation*
EA1P	*Environment Action 1 Project*
EIA	*Environmental Impact Assessment*
EIS	*Environmental Impact Statement*
EPL	*Environmental Protection License*
EPLS	*Environmental Protection License Scheme*
FARA	*Fisheries and Aquatic Resources Act*
FD	*Forestry Department*
FFPO	*Flora and Fauna Protection Ordinance*
FSMP	*Forestry Sector Master Plan*
HC	*High Court*
IEE	*Initial Environmental Examination*
ITCP	*International Treaties/ Conventions/ Protocols*
IUCN	*International Union for Conservation of Nature and Natural Resources*
LDO	*Land Development Office*
LSO	*Land Settlement Office*
MEA	*Multi-lateral Environmental Agreements*
MPPA	*Marine Pollution Protection Policy*
NCS	*National Conservation Strategy*
NEA	*National Environment Act 1980*
NEAP	*National Environment Protection Act*
PAA	*Project Approving Agencies*
PIL	*Public Interest Litigation*
SC	*The Supreme Court of Sri Lanka*
SEA	*Strategic Environmental Assessment*
SIL	*Special Import License*
SLSI	*Sri Lanka Standards Institution*
TOR	*Terms of Reference*

UDA	*Urban Development Authority*
UN	*United Nations*
UNEP	*United Nations Environment Program*
CEA	*Central Environmental Authority*
CISIR	*Ceylon Institute for Scientific and Industrial Research*
CITES	*Convention on International Trade in Endangered Species of Wild Fauna and Flora*
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NEAP	*National Environment Protection Act*
PAA	*Project Approving Agencies*
PIL	*Public Interest Litigation*
SC	*The Supreme Court of Sri Lanka*

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2. Coast Conservation Act, 1981 No.57: to make provisions for Coast Conservation including the preparation of a Coastal Zone Management Plan

based on the surveys within the zone including all coastal wetlands with an indication of their significance as fisheries or Wild life habitats (Section 11) and taking over some functions of Crown Lands Ordinance No.8 of 1947. 1981 No.59 Marine Pollution Prevention Act: to provide for the prevention, reduction and control of pollution in Sri Lanka waters and for matters connected with including power to take action against any marine pollution caused to the living marine resources and wildlife.

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2. Environmental Policy and Law
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4. Indian Journal of Environmental Law
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6. ADB Journal of International Law
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