

**ENVIRONMENTAL  
LEGISLATION  
AND  
INSTITUTIONS  
IN  
BANGLADESH**

**HANDBOOK ON NATIONAL ENVIRONMENTAL  
LEGISLATION AND INSTITUTIONS IN  
BANGLADESH**

**SOUTH ASIA COOPERATION FOR  
ENVIRONMENT PROGRAM (SACEP) COLOMBO,  
SRI LANKA**

**UNDER THE UNEP/ SACEP/ NORAD  
PUBLICATION SERIES ON ENVIRONMENTAL  
LAW AND POLICY**

## PREFACE

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

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

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

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

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

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8. Bangladesh Wildlife (Preservation) Act, 1973
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10. Antiquities Act 1968 as, Amended By the Antiquities (Amendment) Ordinance 1976
11. Groundwater Management Ordinance 1985
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13. Public Health (Emergency Provisions) Ordinance 1944
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7. United Nations Convention on the Law of the Sea
8. Vienna Convention For The Protection of the Ozone Layer (1985)
9. Montreal Protocol on Substances that Deplete the Ozone Layer (1987)
10. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)
11. Convention on Biological Diversity
12. United Nations Framework Convention on Climate Change (1992)
13. United Nations Convention to Combat Desertification
14. Rio Declaration on Environment and Development and Agenda 21 (1992)
15. The Forest Principles (1992)
16. Washington Declaration on Protection of the Marine Environment From Land-Based Activities (1995)

## CHAPTER I

### EXECUTIVE SUMMARY

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#### 1. INTRODUCTION

The South Asia region is comprised of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. Given that these countries share similar economic, social and cultural contexts, the environmental maladies that confront each are also of a similar nature. In particular one can identify the systemic issues confronting each of these areas within the South Asian region. High population growth has consequentially increased urbanisation, as those seeking to alleviate their poverty migrate to urban areas for employment and other opportunities. This concentration of population within urban centres exacerbates the strain on the environment and natural resources, which in turn causes additional environmental problems to arise. Furthermore South Asia is also home to a significant but decreasing array of terrestrial and marine biodiversity, which demonstrates the growing number of environmental challenges that must be addressed in this region.

#### 2. ENVIRONMENTAL ISSUES AFFECTING BANGLADESH

In Bangladesh the environmental issues are numerous. These problems relate largely to systemic issues such as poverty, unemployment, illiteracy and the impact of human movement in particular areas. For example the multiple environmental problems caused in Bangladesh because of the improper disposal of solid wastes are aggravated by mass illiteracy and the lack of hygiene education. Thus all sorts of decomposable garbage and solid wastes are swept into the open ground, which causes the consequential problems of insect menaces, frequent disease epidemics, and air and water pollution. In the absence of sufficient awareness campaigns and alterative measures of domestic and industrial waste disposal such environmental and human problems will not abate.

In addition, Bangladesh faces many more environmental challenges in light of issues of water and atmospheric pollution, the improper management of chemicals and wastes, the depletion of forest areas, decreasing biodiversity and the decimation of wildlife numbers. In many respects these problems confronting Bangladesh and many other South Asian countries are inextricably related to worldwide issues of development and underdevelopment. For example, in Bangladesh the dire environmental scenario is largely attributable to the rapid industrialisation that has been undertaken in the country. Such efforts to maintain a place within global trade, economics and commercial markets have inspired this drive towards incredible transformation and has impacted considerably on the state of the environment.

The effect of this global pressure to industrialise is evident in the environmental problems that confront Bangladesh. Rapid growth in industrial emission, vehicular exhaust and hence air pollution, is just one of the numerous environmental consequences of the struggle towards development. In addition, developing countries unlike those already developed, are not equipped to deal with issues of environmental degradation, which inevitably result from attempts to urbanise, industrialise and be globally competitive. Basic issues such as sanitation, disposal of wastes and chemicals, recycling and the conservation of resources are beyond the scope of countries such as Bangladesh, particularly so in the poorer parts of these developing areas.

Biodiversity and the preservation of wildlife is also an issue that needs to be addressed globally and within Bangladesh. The depletion of forests for industrial uses and the consequent destruction of wildlife habitats have the corresponding effect of decreasing Bangladesh's rich biodiversity and animal numbers. Several species of mammal, plant and the like have already become extinct with many more numbers threatened and endangered.

### **3. JUDICIAL, CONSTITUTIONAL AND INSTITUTIONAL RESPONSES TO ENVIRONMENTAL CONCERNS**

In respect of these growing problems the Bangladeshi Government has attempted to implement a legislative and institutional system to address these issues. Many legislative enactments have been made, which enunciate specific intentions to address environmental concerns in the region. This more specific emphasis is fortified by sectoral legislation and policies within other areas of the Bangladesh institutional framework, which also have the effect of addressing particular areas of resource management, sustainable development or canvass more general environmental protection issues.

A total of 23 laws have been identified which contain provisions regarding the conservation of the environment and control of environmental pollution. These are supported by a further 185 laws which have some bearing on environmental and resource preservation. These laws provide for measures relevant to environmental offences, and by prescribing or prohibiting certain activities, they establish the duties and responsibilities of the controlling authority and the public in general. Thus, on face value, it appears that Bangladesh has in place a comprehensive legislative regime for regulation of actions relating to the environment.

Although many different legislative regimes have been implemented in Bangladesh over the years, these nevertheless have structural flaws, which hinder the successful effect of such regulatory mechanisms. In particular, the inadequate provision for enforcement and the jurisdictional conflicts inherent in many of these laws means that the effective implementation of such legislation is difficult. Further, an administrative culture based on a centuries old perception of the unchallenged authority of the "Ministries" and a fear by these ministries that new environmental legislation would allow other agencies to usurp their power has undermined the potential implementation of the legislative premise. Thus the inherent defects within the laws and the entrenched culture of the Bangladesh

government has severely encroached upon the possible achievements that this legislation envisaged.

In recent years, the judiciary in Bangladesh has made some attempts to integrate environmental considerations into basic constitutionally enshrined rights. In Bangladesh, landmark decisions delivered by the Supreme Court in 1995 and 1996 expanded the legal concept of *locus standi* to allow actions to be initiated when environmental concerns affected the interests of the public at large. Thus the term “any person aggrieved” was extended to include not just those individually affected, but also persons generally as a consolidated personality. The effect of this decision is instrumental in not only making the possibility of environmental redress through the courts available, but also in allowing the weaker sections of society to access environmental justice. In this respect the judiciary has upheld the ideal that the environment is fundamental to human life and enjoyment and, as such, the public at large should possess the legal capacity to protect this essential element of human existence.

One can also suggest that in light of the growing global awareness of environmental issues Bangladesh’s commitment to preservation of the environment and the achievement of sustainable development is strengthened. Bangladesh has so far signed and ratified or acceded to 28 international conventions, treaties and protocols relevant to the environment. To give effect to these international obligations, Bangladesh is committed to enacting domestic legislation. In this respect, despite the inherent defects in much of Bangladesh’s environmental legislation and its inadequate enforcement, the country’s commitment to the management and preservation of the environment is substantially secured through its international obligations.

Additionally Bangladesh has become involved in a series of programs and initiatives with its South Asian neighbours to address the environmental concerns that they each share. Such initiatives are within the umbrella concept of “Sub regional Cooperation”, which envisages that the countries of South Asia will act cooperatively in their endeavours to confront certain environmental problems. This inter-regional commitment is manifest in particular programs that have since been implemented and further exemplifies the growing propriety of environmental protection within South Asia.





## CHAPTER II

# LIST OF ENVIRONMENTAL ISSUES, POLICIES, LEGISLATION, INSTITUTIONS AND INTERNATIONAL CONVENTIONS IN BANGLADESH

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### Map of Bangladesh

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### Key Environmental Issues

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- Population density and poverty
- Unplanned human settlement
- Unplanned urbanisation and industrialisation
- Increasing population density
- Natural disasters (cyclones, floods etc.)
- Global warming
- Faecal pollution
- Forest Depletion

- Loss of Habitat or Endangered Species
- Declining Fish Catch
- Shortage of Drinking Water
- Sea Level Rise
- Solid Waste Management
- Water pollution, urban air pollution, and ground water pollution
- Chemical and Hazardous Waste Management
- Lack of environmental capacity building
- Environmental education

## **Environmental Policies**

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- Wetland Policy for Bangladesh
- National Environment Action Plan, 1992
- National Forest Policy, 1994
- National Environment Policy (1995)
- Energy Policy (1996)
- Fishery Policy (1998)
- Water Policy (1999)
- Industry Policy (1999)
- Agriculture Policy (1999)
- Country's Fourth and Ninth Five Year Plan (1997-2002)

## **Legislation Related to Environment**

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- Antiquities Ordinance 1986
- Authority Ordinance 1950
- Bangladesh Wildlife (Preservation) Act 1973
- Canals Act 1864
- Conservation and Protection of Fisheries Act 1950
- Constitution of Bangladesh (Article 31, 32)
- Cultural heritage Irrigation Policy 1998
- Embankment and Drainage Act 1952
- Environment Conservation Act, 1995
- Factories Act 1965
- Fish Conservation Act, 1950
- Fish Policy 1998
- Forest Act 1927; modified in 1973
- Irrigation Act 1876
- IWTA Ordinance 1958

- Marine Fisheries Ordinance, 1983
- Mines Act 1927
- Penal Code, 1860
- Petroleum Act 1934
- Private Fisheries Protection Act 1889
- Shipping Ordinance, 1976
- Soil conservation EPC Ordinance, 1977
- Territorial Water and Marine Zone Act, 1974
- Water Hyachith Act 1939
- Water and Power Development Board, 1972
- Water Supply and Sewerage Authority Ordinance 1963; amended in 1989
- Wildlife (Preservation) Order 1974
- Wildlife (Preservation) Act 1973; amended in 1974

### **Environmental Institutions**

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Ministry of Environment and Forest; Ministry of Planning; National Environmental Council; Department of Forests; International Institutes of Environment; The Forest Research Institute, Bangladesh; Forest Industries Development Corporation; Institute of Forestry and Environmental Sciences; Ministry of LGRD & C; Ministry of Water Resource; Ministry of Agriculture; Ministry of Health and Family Welfare; Department of Public Health Engineering; Ministry of Local Government; Rural Development and Cooperatives; Water Supply and Sewerage Authority; Ministry of Energy and Mineral Resources.

### **International Conventions/Treaties/Protocols (ICTPs) in the Field of Environment to which Bangladesh is a Party**

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- International Plant Protection Convention, Rome, 1951
- International Convention for the Prevention of Pollution of the Sea by Oil, London, 1954 (as amended on 11 April 1962 and 21 October 1969)
- Plant Protection Agreement for the South East Asia and Pacific Region (as amended). Rome 1956
- Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, Moscow, 1963
- Treaty on Principles Governing the Activities of States in the Exploration and use of Outer Space including the Moon and Other Celestial Bodies, London, Moscow, Washington, 1967
- International Convention Relating to intervention on the High Seas in Cases of Oil Pollution Casualities, Brussels, 1969

## List of Issues, Institutions, Legislation and MEAs

- Convention on Wetlands of International Importance especially as Waterfowl Habitat, Ramsar, 1971 (Popularly known as Ramsar Convention)
- Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxic Weapons, and on their Destruction, London, Moscow, Washington, 1972
- Convention Concerning the Protection of the World Cultural and Natural Heritage, Paris, 1972
- Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington, 1973 (Popularly known as CITES)
- United Nations Convention on the Law of the Sea, Montego Bay, 1982
- Vienna Convention for the Protection of the Ozone Layer, Vienna, 1985
- Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal 1987
- London Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, London, 1990 (Copenhagen Amendment)
- Convention on Early Notification of a Nuclear Accident, Vienna, 1986.
- Agreement on the Network of Aquaculture Centres in Asia and the Pacific, Bangkok, 1988
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Basel, 1989
- International Convention on Oil Pollution Preparedness, Response and Cooperation, London, 1990
- United Nations Framework Convention on Climate Change, New York, 1992
- Convention on Biological Diversity, Rio De Janeiro, 1992
- International Convention to Combat Desertification, Paris, 1994
- Convention on the Prohibition of Military or any other Hostile Use of Environmental Modification Techniques, Geneva, 1976
- Agreement related to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, New York, 1994
- Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and management of Straddling Fish Stocks and Highly Migratory Fish Stocks, New York, 1995
- Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, Paris, 1993
- United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, Paris, 1994
- Convention on Nuclear Safety, Vienna, 1994

## CHAPTER III

### REGIONAL OVERVIEW

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#### 1. INTRODUCTION

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

**Map of South Asia**



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

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

## **2. ENVIRONMENTAL GOVERNANCE**

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

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

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

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

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

### **3. ENVIRONMENTAL INSTITUTIONS**

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

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

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

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

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

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

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



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

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

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

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

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

**India** has well evolved institutes at central, state, district and local levels and has established a National Environmental Council headed by the Prime Minister 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 (Article-15). Nepal's new Constitution of the Kingdom of Nepal, 1990, which arose following the period of political realignment in Nepal, imposes a duty upon the State to incorporate environmental matters into its policy making and implementation process.

### (iii) Example Box 3: Constitution of Sri Lanka

*Chapter VI, Article 28*

The exercise and enjoyment of rights and freedoms is inseparable from the performance of duties and obligations, and accordingly it is the duty of every person in Sri Lanka -

(a) - (c) ...

(d) to preserve and protect public property and to combat misuse and waste of public property;

(e) ...

(f) to protect nature and conserve its riches...

## 5. ENVIRONMENTAL LEGISLATION

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

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

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

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

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

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

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

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

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

## 6. ENFORCEMENT OF ENVIRONMENTAL LEGISLATION

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

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

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

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

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

## 7. ENVIRONMENTAL IMPACT ASSESSMENT

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

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

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

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

#### (v) Example Box 5: Environmental Impact Assessment

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

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

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

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



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

## **8. ROLE OF THE JUDICIARY**

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

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

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

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

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

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

Courts have applied the public trust doctrine in regard to the management of natural resources and the environment, and in some states have given consideration to the concept of inter-generational and intra-generational equity. In this respect the administration of environmental issues and litigious matters is approached with firm consideration for maintaining the environment for future generations. In the 1988 Supreme Court of **India** decision of *Rural Litigation and Entitlement Kendra 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 1<sup>st</sup> 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 11<sup>th</sup> 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 11<sup>th</sup> 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 endeavour.

## **12. IMPLEMENTATION OF GLOBAL CONVENTIONS**

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

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

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

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

### **13. CONCLUSION**

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

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

**SOUTH ASIA ENVIRONMENTAL FACT SHEET**

<b>COMPARATIVE TABLE</b>							
<b>ITEMS</b>	<b>BANGLADESH</b>	<b>BHUTAN</b>	<b>INDIA</b>	<b>MALDIVES</b>	<b>NEPAL</b>	<b>PAKISTAN</b>	<b>SRI LANKA</b>
<b>Constitutional Status on Environmental Protection</b>	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 73 <sup>rd</sup> and 74 <sup>th</sup> 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.
<b>Major Environmental Laws</b>	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 Env't. '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
<b>Institutions Directly Responsible for implementation.</b>	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 Env't. 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
<b>Environmental Tribunals</b>			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
<b>Environmental Policies, Strategies and action Plans</b>	National Environment Policy adopted in '92. Forestry Master Plan in '93 and National Conservation Strategy '92 & Env'tal 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 Env'tal 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 Env'tal 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.
<b>Judiciary</b>	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 env'tal hazards; Right to clean and unpolluted water a FRt.	The SC and Court of Appeals exercise writ jurisdiction. Locus standi widened to hear PILs.

### STATUS OF MAJOR GLOBAL ENVIRONMENT CONVENTIONS IN SAARC REGION

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Country Status – Ratification  
(\* = Accession)

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



## CHAPTER IV

### COUNTRY PROFILE

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#### 1. GEOGRAPHY

Bangladesh has a glorious history of several centuries. Bangladesh with 147,570 sq. km land area is located in the Tropics between 2034 north and 2633 North latitudes and 8801 East longitude in South Asia. The Indian state of West Bengal, Meghalya, Assam and Tripura border Bangladesh in the West, the North and the East. Bangladesh also shares a border with Mayanmar in the Southeast corner. In the South, Bangladesh has a long coastline along the Bay of Bengal. Bangladesh is classified into four physiographic regions.

- Western and Northern Frontier Hilly regions.
- Cheat label
- Flood Plains of Ganges, the Brahmputra and the Meghna river systems, and
- Delta.

The unique features in Bangladesh are the world's largest single tract of mangroves located at the southwest part of the country and the longest shark free sandy beach in the world located in the southwest part of the country.

#### 2. POPULATION

Bangladesh is one of the most densely populated countries in the world. Its total population is over 120 million, which equates to 800 persons per sq. km. A majority of the population are Muslim, Hindu, Christian and other religious groups.

#### 3. OTHER SOCIO-ECONOMIC INDICATORS

Bangladesh is a 28 year old nation, still not enjoying a healthy socio-economic base. Rather it has an overwhelming population pressure with a poor literacy rate, two nutritional levels, low numbers of skilled manpower, frequent natural calamity, poverty, unscientific and over exploitation of natural resources. The major socio-economic indicators are mentioned below

##### 3.1 Human Resource

In Bangladesh, the two primary resources are man and land, the former overwhelming the latter. Existing inequality in the distribution of land can be mitigated by the equitable development of human resources and equitable access by all to the benefits of

development. Increases in non-formal vocation education, on-the-job training, training for self-employment and development of small entrepreneurship at local and grass-roots levels, can add a new dimension for human resource development.

### **3.2 Literacy**

Approximately 53% of the population is illiterate in Bangladesh. Since resources are very limited in comparison to the incredible size of the population, a simultaneous increase of investment of public funds at all levels of education is beyond expectation. Rather efficient and wise use of resources with prioritization of technical and vocational education could be a central strategy in the advancement of education.

### **3.3 Health Level**

An increase in population puts higher demands on health services, which in turn struggle to provide adequate facilities and services to cope with this demand. Furthermore, the increased rate of mortality and morbidity is indicative of the systemic problems of malnutrition and environmental degradation in Bangladesh. The National Health Survey of 1996 showed that 26.4% of the people of Bangladesh suffer from visual disability, 18.5% from a hearing disability and so on. These health problems are caused largely by inadequate food intake and air and water pollution. The national disability rate is 11 persons per every 1000. The mortality rate of children under 5 is one of the highest in the world and approximately 60% of children experience moderate to severe malnutrition.

## **4. INDUSTRY**

The fact that approximately half of the population cannot contribute to the country's development effort reflects the great impediment to the industrialisation of Bangladesh. Unplanned industrial expansion in the vicinity of Dhaka has already adversely affected the quality of surface water in the rivers around Dhaka and the scenario is almost identical in other cities within the country. Industries are now becoming the primary cause of pollution in waters, air and even within land. Consequently, health costs have increased by \$25 per month, which has been mirrored by an increase in water supply costs as well.

## **5. LAND, FORESTS AND MINERAL RESOURCES**

In terms of usage of land, 52% of total land is cropped land, 13% are forests, 27% are rivers and other water bodies and urban lands. 25% of land is used for industrial purposes, 4% is fallow land and another 4% is wasteland. Deforestation, hill cutting, mining etc. causes land degradation through surface erosion, increased salinity and desertification. Due to unplanned and unscientific deforestation, the forest cover of Bangladesh is dwindling at an alarming pace and at present, only about 8% forest cover remains, which is the very minimum for a country's environmental balance.

Bangladesh is naturally gifted with some renewable resources such as fisheries, water and solar power etc. There also exist several non-renewable resources such as natural gas, oil, peat, coal, hard rock/stones white clay etc. Some of these natural resources are in abundance and others are yet to be explored.

## **6. WATER QUALITY**

Bangladesh is an intricate network of more than 200 large and small rivers, which discharge flashes of approximately 175 billion cu. per meter to the Bay of Bengal. These rivers carry water from a catchment area of 1.7 million square kilometres and transport about 2.4 billion tons of sediment annually. The main rivers are Ganges, Brahmaputra and Meghna.

About 50% of urban population and nearly 85% of the rural population have access to a supply of drinking water. Most of the drinking water (about 50%) comes from underground water sources. Still saline water intrusion and arsenic poisoning are observed in the groundwater of some areas. Arsenic pollution has emerged as a recent alarm in numerous districts in Bangladesh.

Water borne diseases sometimes appear as an alarming epidemic and they cause a majority of mortality and morbidity in Bangladesh. This is largely due to a lack of awareness, accessibility problems and non-use of tube well water for domestic purposes.

## **7. CRITICAL ENVIRONMENTAL ISSUES**

- Population and poverty
- Degradation of resources (anti-people and uncoordinated)
- Conflict of development with environment illiteracy versus ignorance
- Pollution: water, air and soil
- Destruction of mangrove, tree cover and firewood
- Loss of fisheries
- Unplanned human settlement
- Unplanned urbanisation and industrialisation
- Loss of wildlife
- Natural hazards

Sustainable development of the country's environment largely depends on the integration of environmental issues in developmental activities at all levels of decision making. With a view to achieving this, the identification of critical environmental issues in conjunction with scientific action to combat those issues is critical. Some key issues are as follows:

1. Over the past 100 years, Bangladesh has warmed by 0.5% and this trend is still continuing at present. Thus, Bangladesh is projected to be 0.5 to 2.0 degrees Celsius warmer by the year 2030.

2. There has been sea level rise and the subsequent submerge of a vast area in the south of Bangladesh.
3. The dramatic impact of drought and desertification at the central and northern part of the country.
4. Degradation of the environment, services and facilities, especially in urban areas, due to the expanding nature of the population.
5. Geo-political location of the country in terms of the delta of a huge catchments /water shed of the Indian basin. Naturally, Bangladesh is more vulnerable to water quality and quantity issues. In addition the regional water sharing issue is a major factor, which dominates sectoral development.
6. As an agrarian country, Bangladesh is largely dependent on her land and water resources. Due to ever increasing population pressure, it is now a difficult strategic issue to allocate limited resources for agriculture, fisheries, urbanisation and other land uses for sustainable development. As a result, agricultural resources are already under severe pressure and environmental strain.
7. The present state of sanitation, especially in the rural Bangladesh in relation to the drinking water supply, water quality and bacterial contamination is very alarming. Only 36.9% of the population has an acceptable sanitary system for safe disposal of excreta.
8. Bangladesh has classified natural forest areas of 6-8% of the total land area, where the recent trend of deforestation is accelerating. Thus some diversified and complex ecosystems are under serious threat, which is particularly alarming for the world's largest mangrove tract. Sunderban reserve forest is gradually being degraded due to rapid deforestation, top-dying, saline water intrusion and coaching and inadequate reforestation.
9. Unplanned industrialisation depriving environmental consideration, especially in and around residential areas is responsible for causing serious water and air pollution. Industrial wastage, smokes, effluents of tanneries are also causing health problems, making human habitats unusable and causing water pollution in major rivers.
10. Serious problems of environmental degradation resulting from unplanned urbanisation needs to be evaluated in terms of:
  - i. Land use, land use alteration;
  - ii. Inadequate water, sanitation, shelter and other facilities in slums and other poor areas of cities;
  - iii. Degradation of community environment; and
  - iv. Inadequate control over industrial wastage commissions and unhealthy handling of human and domestic wastes.
11. Increased exploitation of natural resource bases, for example land, water and energy. Mass awareness and quick action from authorities and the public is needed to minimise environmental degradation.

## **8. PROBLEMS, CAUSES AND RESPONSES**

### **8.1 Poverty and rural development**

Bangladesh is trapped in a vicious cycle of poverty, which is evident in the large-scale unemployment, low income levels, low productivity due to deficiency of capital and a weak technological base. The ongoing fifth five year plan aims to alleviate poverty through accelerated economic growth (avg. 7% per annum) and to achieve a noticeable improvement in the standard of living of people by raising their level of income and meeting their basic needs.

### **8.2 Population**

The population of 120 million of Bangladesh in conjunction with the growth rate of 1.75% is designated as the foremost problem within the country. These rates mean that approximately 1.2 million people are contributing to the enormous population each year. Thus the country is facing an increasing dilemma in relation to the land/man ratio, which is aggravating unemployment and consequently thwarting the prospect of socio-economic development. Proposed population control programs are yet to be effectively delivered, as further development of local level institutions and mass literacy is necessary.

### **8.3 Education**

Universal primary education is a precondition for modernisation and development. The overall literacy rate in Bangladesh is 44.3% (1995), females having a 28.5% rate and males a 50.4% rate of literacy. The gap between the rates of literacy for urban and rural areas varied by 63.0% and 36.6% respectively. As resources are limited, the wise use and scientific management of educational resources is necessary for socio-economic development of the masses.

## **9. LEGAL FRAMEWORK OF ENVIRONMENTAL MANAGEMENT**

Age-old norms and experiences in conjunction with the country's Constitution and a number of legislative enactments, ordinances and policies, constitute the legal framework of national forest management efforts in Bangladesh. The National Environmental Policy 1992; the Bangladesh National Conservation Strategy (BNCS); the Bangladesh Environment Conservation Management Action Plan (NEMAP); the Forestry Master Plan; the Wildlife (Preservation) Act, 1973 are just several of the laws and policies that compose Bangladesh's legal framework. In addition, sectoral enactments based on pollution also emphasise the environment and its conservation. These include the Forest Act 1927 and the Amendment Act, 1990; the Flood Action Plan and Flood Management Strategy; the Water Resources Planning Law 1992; the Brick Burning (Control) Act 1990; the Coast Guard Law, 1994; the Pesticide Ordinance 1971; the Pesticide Rules 1985; the Explosives Act 1923; the Penal Code 1860; the Fisheries Protection Act 1889; the Conservation and Protection of Fisheries Act 1950; the Marine Fisheries Ordinance 1983; the Territorial Water and Marine Zone Act 1974; the Mines Act 1927; the

Petroleum Act 1934; the Antiquities Act 1986 and Antiquities Ordinance 1986; Irrigation Policy 1998; the Water Supply and Sewerage Authority Ordinance 1963 amended in 1989; the Inland Shipping Ordinance 1976; the Embankment and Drainage Act 1952; the Water Hyachith Act 1939; the Canals Act 1864; the Irrigation Act 1876; Wetland Policy 1997; Water and Power Development Board 1972; Soil conservation EPC Ordinance 1977.

## 10. PREVENTION AND SETTLEMENT OF ENVIRONMENTAL DISPUTES

The term “Environment” as per the *Environment Protection Act 1995*, is defined to include water, air, land and the physical properties and inter-relationships that exist between these elements and human beings, other living creatures, plants and micro-organisms. Thus any sort of violation of norms that affects social, physical, biological and ecological factors is designated as an environmental dispute. This definition deals with a broad spectrum of issues such as land transformation, air, water and sound pollution, unplanned and unhealthy sewerage, discharge, contamination of domestic and river water flow, illegal poaching and destruction of habitats, unplanned industrial and residential areas, slums etc. All of these diverse issues nevertheless constitute a violation of settled norms and are restricted by the constitutional obligations, provisions, policies, sectoral ordinances and laws of the government.

Any sort of dispute, within the established frame of prescribed environmental related acts, are settled under the Code of Criminal Procedure. It is worth mentioning that a number of amendments have since been implemented. As there is a varied level of courts, keeping Bangladesh Supreme Court as the highest body to settle the dispute, which body will deal with a dispute will depend on the extent, nature, value and perspective involved. The subordinate courts are:

- Appellate Division
- High Court Division
- District and Sessions Judge Court
- Additional District and Sessions Judge Court
- Sub-judge and Assistant Sessions Judge Court
- Assistant Judge Court
- District Magistrate Court
- Thana Magistrate Court
- Metropolitan Magistrate Court
- Division Special Judge Court
- Special Tribunal Judge Court
- Small Case Court
- Village Court

Moreover, in some cases the Special Forest Court is also active in the country to settle forests and environmental disputes.

## CHAPTER V

# OVERVIEW OF CONSTITUTIONAL, LEGISLATIVE AND INSTITUTIONAL FRAMEWORK

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## CONSTITUTION

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**Key Issues:** No specific provisions for the right to a clean environment as a fundamental right

**Key Provisions:** Constitution of Government of Bangladesh (Articles 23, 24, 31 and 32) relates to different facets of the environment

**Key Institutions:** Supreme Court of India; High Courts; District Courts; Authorities; Tribunals

### 1. INTRODUCTION

Like other nations of the South Asia region, Bangladesh has also reacted 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' (Article-15). In response to the above constitutional commitment, Bangladesh has so far been a signatory to 22 international conventions, treaties and protocols related to the environment.

### 2. CONSTITUTIONAL PROVISIONS

Constitution of the People's Republic of Bangladesh as amended in 1986:

Part II, Art. 23

The state shall adopt measures to conserve the cultural traditions and heritage of the people and so foster and improve the national language, literature and the arts that all sections of the people are afforded and the opportunity to contribute towards and to participate in the enrichment of the national culture.

Part II, Art. 24

The state shall adopt measures for the protection against disfigurement, damage or removal of all monuments, objects or places of special artistic or historic importance or interest.

Part III, Art. 31

To enjoy the protection of law, and to be treated in accordance with the law, and only in accordance with the law, is the inalienable right of every citizen, wherever he may be, and of every other person for the time being within Bangladesh, and in particular no action detrimental to the life, liberty, body, reputation or property of any person shall be taken except in accordance with the law.

Part III, Art. 32

No person shall be deprived of life or personal liberty save in accordance with the law.

The Constitution of Bangladesh does not explicitly provide for the right to a healthy environment as a fundamental right. However, Article 31 provides that ~~every~~ citizen has a right to protection from action detrimental to life, liberty, body, reputation or property unless these are taken in accordance with law". Article 32 states, ~~no~~ person should be deprived of right or personal liberty save in accordance with law". When construed together, these two articles provide for a fundamental right to life. Thus the question remains whether this right to life includes the right to an environment capable of supporting the growth of meaningful existence of life, or alternatively the right to a healthy environment. In two recent cases the courts have attempted to resolve this question in a positive fashion. In *Dr. Mohiuddin Farooque v. Bangladesh and others*, the Court reiterated Bangladesh's commitment ~~for~~ the conservation of the environment irrespective of the locality where it is threatened". This judgement clearly asserted that ~~Articles 31 and 32 of our Constitution protect life as a fundamental right". This fundamental right to life encompasses within its broad ambit the protection of the environment, preservation of an ecological balance free from pollution of air and water and sanitation. In the absence of measures to protect the environment life could hardly be enjoyed and thus one's fundamental right to life would be without substance. In this respect any act or omission contrary to the protection and preservation of a sustainable and enjoyable environment will be in violation of this same right to life.~~

The Constitution of Bangladesh makes special provisions in favour of women and children or for the advancement of any disadvantaged section of citizens under the Article 28.4 of Constitution. The Article reflects the right of the State to make special provisions, although disadvantaged sections of the community cannot demand development as an enforceable right. The Fundamental Principles of State Policies stipulated in Part II of the Constitution spell out certain aims of the State in promoting development. These aims form the basis of every law and guide its interpretation. They also guide the work of the State and citizens. Article 15 has particular significance for directing the implementation of these aims. It provides for the fundamental responsibility of the State to achieve, through planned economic growth, the constant increase of productive forces and the



improvement in the material and cultural standards of living of the people. Thus the State has the responsibility to secure this advancement for every citizen.

The High Court, in the case of *Dr. Mohiuddin Farooque v. Bangladesh and others* (48 DLR 1996, p.438) found that the overarching right to life includes a right to fresh air and water and a situation beyond animal existence where persons can expect normal longevity of life. Hence, it appears that the right to a healthy environment has now, by implication, become a fundamental right. This implicit recognition of the rights to a healthy and sustainable environment, as encompassed within the right to life, places an additional responsibility upon the judiciary to ensure that Rule of Law is guaranteed in cases where the sustainability of a proposed development project is questionable. Furthermore the Bangladesh Constitution provides that no one can be denied the right to life and property except in accordance with law and if those rights are taken away, compensation must be paid. This has been mirrored in many of the laws that regulate a development program in a particular sector and as such they usually allow objections to be raised and provide for compensation of all rights and interests affected by relevant projects. Therefore, the people who are adversely affected have a constitutionally protected right to ask for compensation, which has largely been implemented into domestic legislative regimes. .

## LEGISLATION

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

**Key Legislation:** Constitution of Bangladesh (Article 31, 32); Environment Conservation Act 1995; Penal Code, 1860; Fish Conservation Act, 1950; Bangladesh Wildlife (Preservation) Act, 1973; Wildlife (Preservation) Order, 1974; Factories Act, 1965; Forest Act, 1927; The Pesticide Ordinance, 1971; The Pesticide Rules, 1985; The Explosives Act, 1923; The Penal Code, 1860; Fisheries Protection Act 1889, Conservation and Protection of Fisheries Act 1950; Marine Fisheries Ordinance 1983; Territorial Water and Marine Zone Act 1974; Mines Act 1927, Petroleum Act 1934; Antiquities Act 1986, Antiquities Ordinance 1986, Irrigation Policy 1998, Water Supply and Sewerage Authority Ordinance 1963 Amended in 1989; Inland Shipping Ordinance 1976; Embankment and Drainage Act 1952 Water Hyachith Act 1939, Canals Act 1864; Irrigation Act ,1876; Wetland Policy 1997; Water and Power Development Board 1972; Soil conservation EPC Ordinance 1977.

**Key Institutions:** Ministry of Environment and Forest; The Ministry of Planning; National Environmental Council; Department of Forests; International Institutes of Environment; Forest Research Institute, Bangladesh; Forest Industries Development Corporation; Institute of Forestry and Environmental Sciences.

## 1. NATIONAL POLICY ON THE ENVIRONMENT

National Environment Management Action Plan (NEMAP) 1992 of Ministry of Environment and Forest proposes actions to achieve the objective stated in the National Environmental Policy. These actions cover many diverse areas related to the environment with emphasis on public participation in the process of formulating the action plan. The Five Year Plan (1997-2002) devised in 1997 aims to protect and preserve the environment by putting in place adequate regulatory regimes and effective institutions. This plan is carried out with an underlying view to achieving the regeneration, recycling and optimum exploitation of natural resources consistent with sustainable development and the role of the Ministry of Environment and Forest.

Fourth Five Year Plan (1990-95) 1990 envisages following objectives:

- 1) Control pollution and degradation related to soil, water and air;
- 2) Promote environmentally friendly activities in the development process;
- 3) Preserve, protect and develop natural resources base;
- 4) Strengthen the capabilities of public and private sectors to manage environmental concerns as a basic requisite for sustainable development; and
- 5) Create public awareness for participation in environmental promotion activities.

The National Environmental Policy 1992 has the following aims:

- 1) Maintenance of the ecological balance and overall progress and development of the country through protection and improvement of the environment;
- 2) Protection of the country against natural disaster;
- 3) Identification and control of all types activities related to pollution and degradation of the environment;
- 4) Environmentally sound development in all sectors;
- 5) Utilisation of all natural resources with goals of long-term environmental sustainability; and
- 6) Active involvement in all environmental fields with international initiatives

The Environmental Conservation Act of 1995 empowered the MOEF to formulate rules and guidelines for the management. It also designates DOE responsible for enforcing the 1997 EIA procedures air pollution, water pollution, noise and the implementation of the Ministry of Environment and Forest Environmental Conservation Rules of 1995 regarding air and water pollution. The EIA process is categorised into four classes, those being green, amber A, amber B and red.

## 2. SOME IMPORTANT RELATED ENACTMENTS

## Overview of Constitutional, Legislative and Institutional Framework

A total of 23 laws contain provisions regarding environmental conservation and control of environmental pollution from various sources. The major legislative enactments are listed below:

Pesticide Ordinance 1971 amended in 1980; Agricultural Pest Ordinance 1962; Dangerous Drug Act 1930; Dangerous Drug Control Order 1982; Ordinance 1977; Description Authority Ordinance 1950; Forests Act 1927 Modified in 1973; Wildlife (Preservation) Act 1973 amended in 1974; Fish Policy 1998; Private Fisheries Protection Act 1889; Conservation and Protection of Fisheries Act 1950; Marine Fisheries Ordinance 1983; Territorial Water and Marine Zone Act 1974; Mines Act 1927; Petroleum Act 1934; Antiquities Act 1986 Cultural Heritage Antiquities Ordinance 1986; Irrigation Policy 1998; Water Supply and Sewerage Authority Ordinance 1963; Amended in 1989; Inland Shipping Ordinance 1976, Embankment and Drainage Act 1952; Water Hyacinth Act 1939; IWTA Ordinance 1958; Canals Act 1864; Irrigation Act 1876; Wetland Policy 1997; Water and Power Development Board 1972; Soil conservation EPC Ordinance 1977.

Furthermore, research by the environmental regulatory regime shows that there are approximately 185 laws that are relevant to the environment. These laws provide for measures relevant to environmental offences and, by prescribing or prohibiting certain activities, establish the appropriate rights and duties. The Bangladesh Environmental Conservation Act 1995 is among these laws and was enacted to control and mitigate pollution and promote environmental conservation. This has come into force over Bangladesh as a whole through administration and notification by the Ministry of Environment and Forests (MoEF). Within this legislative framework are similar imperative enactments. The Penal Code 1860, has provisions to monitor pollution in the atmosphere, the Fish Conservation Act 1950, provides measures to ensure undisturbed spawning grounds, the Bangladesh Wildlife (Preservation) Order 1974, prohibits interference with specific species of wildlife etc. Additionally, various other pieces of legislation contain provisions to address the pollution of air, soil, water and other components of the environment.

However, most of these laws remain ineffective. This is largely due to the lack of enforcement, which is a consequence of many legislative and institutional failures. Such failures include the lack of definitive rules, identification of institutions responsible for enforcement, an absence of statutory environmental quality standards and a general lack of legal education and awareness. A National Environment Policy was adopted in 1992 and provides Sectoral Policy Guidelines in combating and promoting environmental matters.

Some of the laws now in force, such as the Forest Act of 1927 were inherited. Others were enacted after 1947 to accommodate and address the issues as they arose. These laws were of use when they were initially enacted but do not satisfy present needs. Moreover, the environmental situation of the world and within Bangladesh has changed

considerably, and as such, to improve environmental management a review and modification of related laws is necessary to accommodate these changing circumstances.

Environmental legislation in Bangladesh currently deals with issues relevant to the:

- a. Protection of environmental health
- b. Control of environmental pollution, and
- c. Conservation of natural and cultural resources. This categorisation is made on the basis of broad objectives of the environmental laws existing in Bangladesh.

The existing laws are not mutually exclusive. It is obvious that many of the laws falling in one category are bound to relate to objectives falling within other categories. This is a natural consequence of the reality that environmental protection is a multisector phenomenon and is not limited to any particular aspect of nature. Example of such laws and policies in Bangladesh are the: Factories Act; Motor Vehicles Act 1939; National Water Policy 1999; Non Agricultural Tenancy Act 1947; Acquisition and Tenancy Act 1950; Waste Land Act 1950; Town Improvement Act 1950; Municipality Ordinance 1977, 1982; Land Reforms Ordinance 1984; Land Reform Board Act 198; Chittagong Hill Tract Regulation Act 1990; New Agricultural Extension Policy 1997; Opium Act 1978; Pesticide Ordinance 1971 amended in 1986; Agricultural Pest Ordinance 1962; Dangerous Drug Act 1930; Dangerous Drug Control Order 1982; Agriculture and Sanitary Improvement Act 1920; Poison Act 1930; Explosive Substances Act 1908 modified in 1983; Explosives Act 1884; Municipality Ordinance 1977; Authority Ordinance 1950; Forest Act 1927 modified in 1973, Forest Wildlife (Preservation) Act 1973 amended in 1974; Fish Policy 1998; Fisheries Protection Act 1889; Conservation and Protection of Fisheries Act 1950; Marine Fisheries Ordinance 1983; Territorial Water and Marine Zone Act 1974; Mines Act 1927; Petroleum Act 1934; Antiquities Act 1986; Antiquities Ordinance 1986; Irrigation Policy 1998; Water Supply and Sewerage Authority Ordinance 1963 amended in 1989; Inland Shipping Ordinance 1976; Embankment and Drainage Act 1952; Water Hyachith Act 1939; Canals Act 1864; Irrigation Act 1876; Wetland Policy 1997; Water and Power Development Board 1972 Soil Conservation EPC Ordinance 1977.

### **3. BANGLADESH ENVIRONMENTAL CONSERVATION ACT 1995 (ECA 1995)**

The Bangladesh Environmental Conservation Act was established with the primary objectives of environmental conservation, environmental standards development and environment pollution control and abatement. It replaced the repealed Environment Pollution Control Ordinance 1977. A special presidential order again renamed the DEPC to the Department of Environmental Pollution Control Ordinance 1989. The Environmental Conservation Act 1995 (ECA'95) is currently the main legislative framework document relating to environmental protection in Bangladesh. It repealed the

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earlier environment pollution control ordinance of 1997 and has been promulgated in 1995. The main objectives of ECA, 1995 are:

- Conservation and improvement of the environment and;
- Control and mitigation of pollution of the environment.

The main strategies of the Act can be summarised as:

- The declaration of ecologically critical areas and the restriction of the operation of certain processes that can or cannot be initiated in the ecologically critical area
- Regulation in respect of vehicles emitting smoke harmful to the environment and environmental clearance of current harmful emissions
- Regulation of industries and other development activities through schemes of discharge permits etc. Promulgation of a standard limit for discharging and emitting waste
- Formulation and declaration of environmental guidelines

The first set of rules for the implementation of the provisions of Act was promulgated in 1997. The Department of Environment (DOE) is responsible for implementing provisions and objectives of the Act. The DOE is headed by a Director General who has a superior authority over this implementation. The power of Director General, which are authorised by the Act can be outlined as follows:

- Identification of different types and causes of environmental degradation and pollution.
- Instigating the investigation and research into information regarding environment
- Conservation, development and pollution
- Power to close down the activities considered harmful to human life or the environment.
- In emergency situations there is no opportunity for appeal. The Director General has the power to declare an area affected by pollution as an ecologically critical area. The DOE governs the type of work or processes, which can take effect in such an area. Similar to in aforementioned clause, if any part of the environment is polluted/damaged by operation the Director General can request or force the operator to make rectifying arrangements. Operators must inform the Director General any pollution incident.

In the event of an accident the Director General may take control of an operation and the respective operator is bound to help. The operator is responsible for costs incurred and possibly compensation. Before a new project can go ahead as stipulated under the rules, operators must obtain an Environment Clearance from the Director General. An appeal procedure does exist for the operators who fail to obtain clearance.

#### **4. ENVIRONMENT CONSERVATION RULES 1997 (ECR, 1997)**

These are the first set of rules to implement the provisions of the Act and were promulgated in 1997. These rules have manifold functions including establishing:

- (i) The National Environmental Quality Standards for ambient air, various types of water, industrial effluent, emission, noise and vehicular exhaust;
- (ii) The requirements for and procedures to obtain environment clearance
- (iii) The requirements for EIA according to categories of industrial and other development interventions.

According to the rules, any project-development initiative within the Red category, is to obtain environmental clearance in two steps - first to obtain site/location clearance (based on the application along with necessary papers, including the Initial Environmental Examination, IEE which will contain the scope of work of the proposed EIA) and secondly to obtain Environmental clearance (by submitting the application along with necessary papers and-after obtaining the approval on the Environmental Impact Assessment Report, which is to be obtained in between). The Department of Environment may take up to sixty days to issue the-site clearance (from the date of receiving the application), sixty days to approve the EIA and thirty more days to deal with the Environmental Clearance, provided everything is satisfactory.

This may be quite a lengthy process if DOE uses the full extent of the time limits. However, the rules provide the Director General with a discretionary authority to grant 'Environmental Clearance' to an applicant exempting the requirement of site/location clearance, provided the circumstance is considered appropriate.

#### **5. PENAL CODE 1860 (CHAPTER XIV OF OFFENCES AFFECTING PUBLIC HEALTH, SAFETY, CONVENIENCE, DECENCY AND MORALS).**

Article 277: Failing Water or Public Spring or Reservoir-

Whoever voluntarily corrupts or fouls the water of any public spring or reservoir, so as to render it less fit for the purpose for which it is ordinarily used, shall be punished with imprisonment of either description for a term which may extend to three months, or with fine which may extend to five hundred taka or with both.

Article 278: Making Atmosphere Noxious to Health-

Whoever voluntarily vitiates the atmosphere in any place so as to make it noxious to the health of persons in general dwelling or carrying on business in the neighborhood or passing along a public way, shall be punished with fine which may extend to five hundred taka.

Article 284: Negligent Conduct with Respect to Poisonous substance-

Whoever does, with any poisonous substance, any act in a manner so rash or negligent as to endanger human life, or to be likely to cause hurt or injury to any person, or knowingly or negligently omits to take such order with any poisonous substance in his possession as is sufficient to guard against probable danger to human life from such poisonous substance,

**Article 285: Negligent Conduct with respect to Fire or Combustible Matter**

Whoever does, with fire or any combustible matter, any act so rashly or negligently as to endanger human life, or to be likely to cause hurt or injury to any other person, or knowingly or negligently omits to take such order with any fire or any combustible matter in his possession as is sufficient to guard against any probable danger to human life from such fire or combustible matter, shall be punished with imprisonment.

**Article 286: Negligent Conduct with Respect to Explosive Substance -**

Whoever does, with any explosive substance, any act so rashly or negligently as to endanger human life, or to be likely to cause hurt or injury to any other person, or knowingly or negligently omits to take such order with any explosive substance in his possession as is sufficient to guard against any probable danger to human life from that substance, shall be punished with imprisonment of either description for a term which may extend to one thousand taka or with both.

## **6. EXPLOSIVES ACT 1884**

Section 6(3) reads

Any person manufacturing possessing, using, selling, transporting or importing an explosive in contravention of a notification issued under this section shall be punishable with imprisonment for a term which may extend to fifty thousand taka, in default of which with a further imprisonment for a term which may extend to one year, and in water or land, the owner and master of the vessel or carriage excuse, each be punished with imprisonment for a term which may extend to ten years and shall not be less than two years and also with a fine thousand taka, in default of which with a further imprisonment for a term which- may extend to one year.

Further section 8(1) and 8(2) read as:

(1) Whenever there occurs in or around or in connection with, any place in which an explosive is manufactured, possessed or used, or any carriage or vessel either conveying an explosive on from being loaded or unloaded, any accident by any explosion or by fire attended with loss of human life or serious injury to person or property, or of a description usually attended with such loss in injury the occupier of the place, or the master of the vessel, or the person in charge of the carriage, as the case may be, shall within such time and in such manner as may be by rule give notice thereof and of the attendant loss of human life or Personal injury, if any, to the Chief Inspector of Explosives in Bangladesh and to the officer in charge of the nearest police station

(2) Whoever in contravention of sub-section (1) fails to give notice of any accident shall be punished with imprisonment for a term which may extend to three months and also with fine which may extend to five thousand taka, in default of which with a further imprisonment for a term which may extend to three months and also with fine which may extend to five thousand take in default of which with a further imprisonment for a term which may extend to one month , and if the accident is attended by loss of human life, with imprisonment for a term which may extend to one year and also with a fine which may extend to ten thousand taka. In default of which with a further imprisonment which may extend to two months.

## **7. EXPLOSIVE SUBSTANCES ACT 1908**

One of the punishment sections A. read as follows:

Section 3: Punishment for causing explosion likely to endanger life, person or property  
Any person who unlawfully or maliciously causes by any explosive substance and explosion of a nature likely to endanger life or to cause serious injury to person or property shall, whether any injury to person or property has been actually caused or not, be punishable with death, or with imprisonment for a term which may extend to ten years and shall not be less than five years, to which fine may be added.

## **8. BANGLADESH WILDLIFE (PRESERVATION) ACT, 1973**

This law provides for the preservation, conservation and management of wildlife in Bangladesh. The earlier laws on wildlife preservation, namely, the elephant Preservation Act - 1879, the Wild Bird and Animals Protection Act - 1912, and the Rhinoceros Preservation Act - 1932 have been repealed and their provisions have been suitably incorporated in this law.

This Act encompasses a range of different activities including hunting and fishing, although the provisions of greatest significance relate to the establishment of wildlife sanctuaries and national parks by the MoEF. Such designations have enormous significance for the types of developments that may take place. However, it must be recognised that no wildlife sanctuaries or national parks occur in close proximity to the proposed project site.

The main provisions are as follows:

1. The Wild animals specified, as "game animals" shall not be hunted, killed or captured save in accordance with the terms of a permit issued under this order.
2. The Wild animals specified in this order shall be known as "Protected Animals" and shall not be hunted, killed or captured save as otherwise expressly provided in this order.
3. No person shall, with a view to carrying on a profession, trade or business, buy, sell or otherwise deal in wild animals, trophies or meat, or process or manufacture



- goods or articles from such trophies or meat unless he is in possession of a valid permit, issued for the purpose by an officer authorized in this behalf.
4. The Government may, by notification in the official Gazette declare any area to be wildlife sanctuary.
  5. The Government may declare any area to be a national park provided that the government may, for scientific purpose or for betterment of the national park or for aesthetic enjoyment of scenery or for any other exceptional reason, relax all or any of the prohibitions specified above.

Article 23 (2): No person shall:

- i) Damage or destroy any vegetation in any wildlife sanctuary;
- ii) Cause any fire in a wildlife sanctuary; and
- iii) Pollute water flowing in or through a wildlife sanctuary.

Contravention or the attempts to contravene various provisions of the Act have been made punishable as specified in the law. However, this legislation does not provide sufficient scope for the creation of a strong organisation, which is capable of adopting appropriate measures to protect wildlife. Punitive provisions are not readily usable. The types of endangered and ecologically valuable animals/birds should be highlighted in the legislation to make it more specific and thus capable of effective administration. It would have been more appropriate if the Act asked for active participation and specific action from local administration to protect wildlife. It also does not sufficiently prescribe seasons when certain animal/birds can not be hunted or captured, which reinforces the defective nature of this legislation.

### **Latest Executive Order**

A very recent executive order issued in June 1998 in relation to the Bangladesh Wildlife Preservation Order 1973 has imposed a ban for the next five years on the hunting of any form of wildlife.

## **9. BANGLADESH FOREST ACT 1927**

The law updated and consolidated the provisions of the laws passed earlier regarding protection and development of forests following the repeal of the Indian Forests Act 1878, the Forest Act 1890 and the amending acts of 1891, 1901, 1911, 1914, 1918. The Government is now empowered to assign a reserve forest to any village community and may declare any forest land and waste land belonging to the government or having property rights, to be "protected forests". The government may stop any public or private way or watercourse in the interest of preservation of the forest.

The relevant section is 26 of the Act, which reads:

Acts prohibited in such forests –

(1) Any person who, in a reserved forest -

- (a) Keeps or carries any fire except at such seasons as the Forest-officer may notify in this behalf,
- (b) Trespasses or pastures cattle, or permits cattle to trespass;
- (c) Causes any damage by negligence in felling any tree or cutting, or dragging; any
- (d) Quarries stone, burns lime or charcoal, or collects, subjects to any manufacturing process, or removes, any forest produce other than timber;

- Or who enters a reserved forest with fire arms without prior permission from the Divisional Forest Officer concerned

- Shall be punishable with imprisonment for a term, which may extend to six months and shall also be liable to fine, which may extend to two thousand taka, in addition to such compensation\_for damage done to the forest as the convicting Court may direct to be paid.

## **10. THE ANTIQUITIES ACT 1968 AS, AMENDED BY THE ANTIQUITIES (AMENDMENT) ORDINANCE 1976**

The Act was enacted to consolidate and amend the laws relating to preservation and protection of antiquities and repealed "The Ancient Monuments Conservation Act 1904" and "The Antiquities (Export Control) Act 1947).

The main provisions of the Act are as follows:

1. If the government has reasonable grounds to believe that any land contains any antiquity, it may direct to acquire such land or any part thereof under the land Acquisition Act, 1894 (I of 1894), as for a public purpose. The government may purchase or take lease or accept a gift or bequest of any antiquity.
2. If the Government apprehends that a protected immovable antiquity -is in danger of being destroyed, injured or allowed to fall into decay, it may, after consultation with the Advisory Committee, acquire such antiquity or any part thereof.
3. Subject to the provisions of this Act or of any agreement, no person shall, except for carrying out the purpose of this Act, destroy, break, damage, alter, injure, deface or mutilate, or scribble, write or engrave any inscription or sign on any antiquity in respect of which the Director has accepted guardianship or the Government has acquired any right.
4. No person shall make on any land excavation for archaeological purpose except under and in accordance with a license granted by the Director.

This legislation does not call for strengthening of the concerned organisation, which will take care about the major provisions under this legislation. How the provisions under this law are going to be implemented is not clearly mentioned. This legislation also does not spell out the need for preservation the antiquities of the country or their value in terms of social and cultural aspects. However, according to the Archaeology Department, any one finding any object of historical or archaeological value during any excavation or site preparation for their own purpose, is to submit the nearest Civil Administration of the police Department

## **11. GROUNDWATER MANAGEMENT ORDINANCE 1985**

This is a framework type of legislation with enabling power to make governmental rules by notification in the official Gazette. This ordinance is mostly related to tube well licensing, which is authorised to the Upazilia Parishad (presently the Thana Executive office). Before granting such licenses, the points to be reviewed include:

- The aquifer condition of the soil where the tube well is to be installed
- Assurance that it will not have any adverse effect upon the surrounding area 'the distance of the nearest existing tube well the suitability of the site for installation of the tube well'.

These tube wells mostly concern irrigation water required for agricultural production and for matters connected therewith.

## **12. GROUNDWATER MANAGEMENT RULES 1987**

These are the first set of rules under the ordinance of 1995. These detail the tube well licensing process, which includes how to obtain, cancel and suspend of these licenses etc. Schedule I of the rules requires

- i) The minimal distance of a new tube well to be approximately three quarters of a mile from the nearest river
- ii) Plantation of the tube well to be above the water level during floods.

### **13. THE PUBLIC HEALTH (EMERGENCY PROVISIONS) ORDINANCE 1944**

This is an ordinance to make special provisions in regard to public health. This is a framework piece of legislation with the provision to make rules, which may prescribe special precautions for the spread of any disease that is considered by the Government to be necessary. Additionally, rules may be prescribed to "prohibit any act which in the opinion of the Government is likely to lead to or facilitate the spread of any disease prescribed under the above clause".

### **14. THE FACTORIES ACT 1965**

This is an Act of repeal and contains certain amendments to the Factories Act 1934. It requires (section 12(1)) that "every factory shall be kept clean and free from effluvia arising from any drain privy or other nuisance and in particular accumulation of dirt and refuse shall be removed daily". Section 13(1) specifies, "Effective arrangement shall be made in every factory for the disposal of wastes and effluent due to the manufacturing process carried on therein".

Further section 14(1) mentions that, effective and suitable provision shall be made in every factory for securing and maintaining in every workroom which requires -

- a) Adequate ventilation by the circulation of fresh air, and
- b) Such temperatures as will secure to workers therein reasonable conditions of comfort and prevent injury to health, and in particular -
  - i) The walls and roof shall not be exceeded but kept as low as practicable;
  - ii) Where the nature of the work carried on in the factory involves, or is likely to involve, the production of excessively high temperature, such adequate measures as are practicable, shall be taken to protect the workers by separating the temperature from the work-room by insulating the hot parts or by other effective means.

Section 15.1 of the Act stipulates that:

- i) In every factory in which, by reason of the manufacturing process carried on, there is given off any dust or fume or other impurity of such a nature and to such an extent as is likely to be injurious or offensive to the workers

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employed therein, effective measures shall be taken to prevent its accumulation in any work-room and its inhalation by workers, and if any exhaust appliance is necessary for this purpose, it shall be applied as near as possible to the point of origin of the dust, fume or other impurity, and such point shall be enclosed so far as possible.

- ii) In any factory no stationary internal combustion engine shall be operated unless the exhaust is conducted into open air, and no internal combustion engine shall be operated in any room unless effective measures have been taken to prevent such accumulation of fumes that are likely to be injurious to the workers employed in the work room.

Further Section 17 requires particular workspace requirements to be satisfied that:

1. No work room in any factory shall be overcrowded to an extent injurious to the health of the workers employed there in.
2. Without prejudice to the generality of provisions of sub section (1) there shall be provided for every worker employed in a work room –
  - a. At least three hundred fifty cubic feet to space in the case of a factory in existence on the date of commencement of this Act; and
  - b. At least five hundred cubic feet of space in the case of a factory built after the commencement of this Act-

In every factory sufficient latrines of prescribed types shall be provided conveniently situated and accessible to workers at all times while they are in the factory.

In every factory the following shall be securely fenced by the safeguards of substantial construction, which shall be kept in position while the parts of machinery required to be fenced, are in motion or in use, namely-

- a) Every moving part of a prime mover and every fly wheel connected to a prime mover;
- b) The head race and tailrace of every water wheel and water turbine;
- c) Any part of a stock bar which projects beyond the head stock of a lathe; and
- d) Unless they are in such position or of such construction as to be as safe to every person employed in the factory as they would be if they were securely fenced:
  - i. every part of an electric generator; a motor or rotary converter;
  - ii. every part of transmission machinery; and
  - iii. every dangerous part of any machinery.

## 15. PROTECTION AND CONSERVATION OF FISH RULES 1985

Conservation Act, 1950 as amended by the Protection and Conservation of Fish (Amendment) Ordinance, 1982 and the Protection and Conservation of Fish (Amendment) Act. 1995 is largely concerned with the conservation of fish in the inland

waters of Bangladesh. This is relatively unscientific and provides a means by which the Government may introduce rules to protect inland waters that are not in private ownership. As the Brahmaputra River is not privately owned, it is covered by this Act. This is framework legislation which incorporates rule making powers. Some of these rules may -

- a) Prohibit or regulate all or any of the following matters, that is to say the construction, temporary or permanent, of weirs, dams, bunds, embankments and other structures
- b) Prohibit the destruction of, or any attempt to destroy, fishes by explosives, gun, bows etc.
- c) Prohibit the destruction of, or any attempt to destroy, fishes by tile poisoning of water or the depletion of fisheries by pollution, by trade effluent or otherwise.

These are a set of rules in line with the overall objectives of the Fish Act. Some of the rules are set out in the Sections below

Section 4 - "No person shall construct ponds, weirs, dams and embankments or any other structure, whether temporary or permanent, in, on, across or over the rivers, canals, khals or beels for any purpose other than irrigation, flood control or drainage".

Section 5 - "No person shall destroy or make any attempt to destroy any fish by explosives, gun, bow and arrow in inland waters or within coastal waters".

Section 6 - "No person shall destroy or make any attempt to destroy any fish by poisoning of water or the depletion of fisheries by pollution, by trade effluents or otherwise in inland waters".

## **16. PESTICIDE ORDINANCE, 1971**

As amended by the Agricultural pesticides (Amendment) Act 1980 and the Agricultural Pesticides (Amendment) Ordinance 1983, the Act provides for the regulation of import, manufacture, formulation, sale distribution and use of pesticides in order to prevent injury to public health or to animals or vegetation. The main provision of the Ordinance is as follows:

No person shall import, manufacture, formulate, repack, sell, offer for sale, hold in stock for sale or in any manner advertise any brand of pesticide unless the same has been registered, and a licence has been obtained from the government for such dealing.

## **17. BRICK-BURNING (CONTROL) ACT, 1989 (ACT NUMBER 8 OF 1989)**

This Act has been promulgated to control the process of brick burning. This requires operators to obtain a license from the appropriate authority (District Commissioner) before the commencement of brick burning. The Act restricts brick burning with fuel

wood and categorically mentions that no one is permitted to use fuel wood for brick burning. The Act has a provision of punitive measures of imprisonment for six months or a fine of Taka Fifty thousand only or both. The Act also provides for inspection of the brick fields to check the use of fuel wood and the inspecting authority has the right to confiscate all the bricks and fuel wood found on the particular brickfield.

### **18. BRICK BURNING (CONTROL) (AMENDMENT) ACT 1992**

This Act was promulgated in July 1992 and was intended to amend certain elements of the Act of 1989. The two major issues requiring special mention in this regard is the shifting of authority from the Upazilla Parishad Chairman to the District Commissioner and the re-definition of fuel. In this Act the definition of fuel is any floral based fuel other than the dead (motha) of the bamboo. The Act replaces the definition of fuel wood enunciated in the earlier act with this fuel.

### **19. BOILERS ACT 1923**

This requires that no owner of a boiler shall use the boiler or permit it to be used, unless it has been registered in accordance the provisions of this Act. The Act mentions, among other things, that the authorising certificate ceases to be in force when any accident occurs to the boiler, when any structural alteration is made.

The punishment is ten thousand Taka and may be extend to two thousand Taka per day for the period of violation. The boiler user can not use the boiler nor test without the certificate. The boiler owner is to inform the inspector within twenty four hours in case of any accident. The age-old norms and experiences combined with Bangladesh's Constitution and the numerous legislative enactments, ordinances and policies, constitute the legal framework of the national forest management. The National Environmental Policy, 1992, Bangladesh National Conservation Strategy (BNCS), the Bangladesh Environment Conservation Management Action Plan (NEMAP), Forestry Master Plan, Wildlife (Preservation) Act, 1973, etc. new framing the local bodies of environmental management in the country. The other sectoral pollution legislative regimes also emphasise the environment and its conservation and thus fortify the existing framework legislation. Those are the Forest Act, 1927 Amendment Act, 1990 Flood Action Plan and Flood Management Strategy, Water Resources Planning Law, 1992. Brick Burning (Control) Act, 1990, Coast Guard Law, 1994 etc. About 182 laws (excluding rules and by-laws) have so far been identified by BELA.

Despite the existence of all of these laws and a number of agencies entrusted to implement and enforce them, there has been a general failure to deliver to the nation what the legislation envisaged.

## **INSTITUTIONS**

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

**Key Institutions:** Ministry of Environment and Forest; The Ministry of Planning; National Environmental Council; Department of Forests; International Institutes of Environment; Forest Research Institute, Bangladesh; Forest Industries Development Corporation; Institute of Forestry and Environmental Sciences;

## 1. INTRODUCTION

Almost all of the diverse sectors within Bangladesh have environmental concerns of some description, especially those relating to action in natural resources management viz. land and water. Institutional arrangements both within public and private sectors are a pre-requisite in policy making, resources mobilisation and are vital to considerations at the level of implementation.

The National Environmental Council is organised and chaired by the Prime Minister. It functions through an Executive Ministerial Committee headed by the Ministry of Environment and Forest and a Divisional Environment Committee headed by the Divisional Commissioner. The Ministry of Environment and Forest is primarily responsible for environmental protection.

The institution responsible for environmental management at a National Level is primarily the Ministry of Environment and Forests (MoEF). The MoEF is responsible for the formulation and monitoring of environmental policy and legislation and is the controlling authority of all executing agencies like Department of Environment (DoE), Forest Department (FD), Bangladesh Forest Research Institute (BFRI), Bangladesh Forest Industries Development Corporation (BFIDC) and Institute of Forestry and Environmental Sciences (IFESCU). Furthermore, it co-ordinates other inter-ministerial (e.g. water, industrial, transport, mining etc) environmental issues. Here the Forest Department, under the frame of MoEF, works as an executing agency for the protection, control, conservation, expansion and maintenance the national forest resources. Its administrative and managerial units are divided according to particular divisions, Ranges and Beat level areas in the national forest.

## 2. MINISTRY OF ENVIRONMENT AND FOREST (MOEF)

The Ministry of Environment and Forest has two major departments concerning the environment, these being the Department of Environment (DOE) and the Department of Forest. The Department of Environment is a technical agency and looks after the environmental planning, management, monitoring and enforcement of the environmental



protection measures. Recently the Department was given new extensive powers on controlling air pollution, protecting habitats and the conservation of soil, water and other natural resources. These also include wide ranging powers to establish environmental standards, particularly those relevant to industrial and vehicular pollutants and noise.

Major programs of the DOE are:

- Water quality monitoring at regional laboratories
- Bangladesh Environment Management Project (BEMP) supported by Canadian Government
- Sustainable Environment Management Program (SEMP) supported by UNDP and the World Bank
- Capacity building for environmental legislation and policy analysis under BEMP
- Institutional strengthening of DOE under BEMP
- River water pollution control in Dhaka city
- Establishment of wastewater treatment plants for handloom industries on a cluster basis
- Conversion of petrol and diesel operated vehicles into CNG, beginning with governmental vehicles
- Promotion of a self monitoring system in the export processing zone and other major industrial areas
- Promotion of public awareness on issues of environmental management
- Industrial surveys and pollution control

The Department of Forest is responsible for the management and development of forest resources. Additionally, it conducts forest study along with the Forest Sector Master Plan.

### **3. INSTITUTIONAL SETUP**

- Resource management laws are provided in the sectoral laws of various ministries and public agencies.
- Most of the civic and anti-nuisance, rather environmentally related provisions, are provided in the powers and functions of various statutory local government bodies. Tortious liability is perhaps included in these laws. In addition there are the Department of Public Health under the Ministry of Local Government, Rural Development and cooperatives, which provide a network to facilitate these laws.
- A water pollution control project became the Department of Environment Pollution Control following an Ordinance of 1977 on Environment Pollution Control. This department was under the Department of Public Health in Ministry of Local Government Rural Development and Cooperatives (MLGRDC).
- In 1989, a separate Ministry of Environment and Forest was created, bringing the Department of Environment Pollution Control from the MLGRDC under its

authority. This resulted in the renaming of the departments, as Department of Environment and the Forestry Division of the Ministry of Agriculture became the Forest Department.

- The Ministry of Planning also has an environment section that monitors the environmental elements of Government projects.
- The environmental issues relating to water resources are administered by the Water Resources Planning Organisation by virtue of the Act of 1992.
- The Bangladesh Atomic Energy Commission is entrusted to regulate radioactivity under the Nuclear Safety and Radiation Control Act, 1993. There are other agencies who are also vested with the duty to protect specific aspects of environment.

## CHAPTER VI

### NATIONAL ENVIRONMENT GOVERNANCE

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**Key Issues:** Population and poverty; Unplanned human settlement; Unplanned urbanisation and industrialisation; Increasing Population Density; Natural Disasters; Global Warming; Faecal Pollution; Forest Depletion; Loss of Habitat or Endangered Species; Declining Fish Numbers; Shortage of Drinking Water; Sea Level Rise; Solid Waste Management; Water Pollution, Urban Air Pollution, Ground Water Pollution; Chemical and Hazardous Waste Management; Lack of Environmental Capacity Building; Environmental Education

**Policy Framework:** National Environment Policy (1992); Water Policy (1999); Fishery Policy (1998); Energy Policy (1996); Industry Policy (1999); Agriculture Policy (1999); National Environment Management Action Plan, 1992;

**Key Legislation:** Constitution of Bangladesh (Article 31, 32); Environment Conservation Act 1995; Penal Code, 1860; Fish Conservation Act, 1950; Bangladesh Wildlife (Preservation) Act, 1973; Wildlife (Preservation) Order, 1974; Factories Act, 1965; Forest Act, 1927;

**Key Institutions:** Ministry of Environment and Forest; The Ministry of Planning; National Environmental Council; Department of Forests; International Institutes of Environment; Forest Research Institute, Bangladesh; Forest Industries Development Corporation; Institute of Forestry and Environmental Sciences;

#### 1. INTRODUCTION

In light of the numerous environmental concerns existing within the country, Bangladesh has been trying to combat these problems and improve its situation despite the limited facilities and resources it possesses in the area environmental and development policies. The main aims are to promote and achieve an appropriate environment management system, the conservation of biodiversity, increased public participation, the development of environmentally friendly activities and the preservation and protection of natural resources. Within these aims are additional intentions to strengthen the capabilities of the public and private sectors, minimise environmental pollution, introduce effective EIA and to undertake research for innovating technologies.

The following policies have become part of the measures to be implemented during the country's Ninth Five Year Plan (1997-2002)

- a. National Environmental Council headed by the Prime Minister and Executive Committee of National Environment Council headed by the Minister for Environment and Forest are to become more active for policy designs and programme directives.
- b. Environment committees at division, district and thana levels will be fortified and public participation strengthened; attempts will be made to form this committee at union level also:
- c. Department of Environment is strengthened in the light of existing Environment Policy, Act and Action Plan. In order to co-ordinate, monitor and implement these activities;
- d. Drafting of rules regulations and guidelines under the Environment Protection Act (EPA) 1995 to ensure effective is to be reviewed and redrafted. This will occur within the context of Bangladesh's commitment to international obligations, as expressed through the signing and ratifying of a number of International Conventions and Protocols on environment;
- f. 'Polluters Pay Principle' is followed in order to ensure strict compliance of environmental legislation;
- g. Incentives in the form of a tax-holiday etc. are provided and incremental costs incurred by the environment friendly entrepreneurs will be met in various forms/sources.
- h. The establishment of a 'National Environment Fund' in order to provide assistance to the victims of environmental degradation caused by natural disasters and anthropogenic activities; and
- i. The continuance of an environmental impact analysis in the processing of development projects for approval of the government.

## 2. CONSTITUTIONAL PROVISIONS

As previously, mentioned Bangladesh has followed much of the world in heeding to a global call for environmental protection and awareness. This response has been exhibited by the implementation of many general legislative frameworks intended to provide some form enforceable protection against continuing ecological degradation. The Constitution of Bangladesh has been interpreted as providing an inalienable right to environmental conservation, implicit in the fundamental right to life. In harmony with this constitutional commitment, Bangladesh has also committed itself to the multitude of obligations enshrined within the 22 international conventions, treaties and protocol related to the environment to which it is a signatory.

In Bangladesh there are about 186 laws related to the environment. A Comprehensive Environment Conservation Act was enacted in 1995 for the protection and conservation

of the environment. In 1992 Bangladesh formulated a comprehensive and integrated policy, the National Environment Policy. The Policy provides a general statement at the national level, which guides the direction of environmental management. It also provides sectoral policies for other ministries. Unfortunately, policies within other sectors have not taken the concerns of the environment protection and conservation of natural resources comprehensively on board. This essentially means that there is a lacuna within the existing legislative regimes in Bangladesh.

### 3. INSTITUTIONAL STRUCTURE OF ENVIRONMENTAL MANAGEMENT

Almost all of the diverse sectors within Bangladesh have environmental concerns of some description, especially those relating to action in natural resources management viz. land and water. Institutional arrangements both within public and private sectors are a pre-requisite in policy making, resources mobilisation and are vital to considerations at the level of implementation.

The institution responsible for environmental management at a National Level is primarily the Ministry of Environment and Forests (MoEF). The MoEF is responsible for the formulation and monitoring of environmental policy and legislation and is the controlling authority of all executing agencies like Department of Environment (DoE), Forest Department (FD), Bangladesh Forest Research Institute (BFRI), Bangladesh Forest Industries Development Corporation (BFIDC) and Institute of Forestry and Environmental Sciences (IFESCU). Furthermore, it co-ordinates other inter-ministerial (e.g. water, industrial, transport, mining etc) environmental issues. Here the Forest Department, under the frame of MoEF, works as an executing agency for the protection, control, conservation, expansion and maintenance the national forest resources. Its administrative and managerial units are divided according to particular divisions, Ranges and Beat level areas in the national forest.

### 4. ENVIRONMENTAL ADMINISTRATION

In **Bangladesh**, the primary institution for environmental management is the Department of Environment (DoE), under the Ministry of Environment and Forest (MoEF). The DoE is the authority with the mandate to regulate and enforce environmental management, and controls the establishment and enforcement of environmental regulations, including the pollution control of water resources. Its key duties relating to the water pollution include:

- Pollution control, including monitoring effluent sources and ensuring mitigation of environmental pollution;
- Setting Water Quality standards (WQS) for particular uses of water and for discharge to water bodies;

- Defining environmental Impact Assessment (EIA) procedures and issuing environmental clearance permits - the latter being the legal requirement before proposed projects can proceed to implementation;
- Providing advice or taking direct action to prevent degradation of the environment; and
- Declaring Environmentally Critical Areas (ECAs) where the ecosystem has been degraded to a critical state. ECA status confers protection on land and water resources through a series of environmental regulations

The administration of the laws on resource management is entrusted to different ministries and public agencies. In 1989 a separate ministry called the Ministry of Environment and Forest (MoEF) was created with the following major functions:

1. Management of environment and ecology
2. Matters relating to environment pollution control
3. Conservation of forests and development of forest resources (government and private) forest inventory, grading and quality control of forest products
4. Regeneration of the extraction of forest produce
5. Plantation of exotic cinchona and rubber
6. Botanical gardens and botanical surveys
7. Tree plantation
8. Planning cell — preparation of schemes and coordination in respect of forests
9. Research and training in forestry
10. Mechanised forestry operations
11. Protection of wild birds and animals and the establishment of sanctuaries
12. Matters relating to marketing of forest produce
13. Liaison with international organisations and matters relating to treaties and agreements with other countries and world bodies relevant to subjects allotted to this Ministry.

The Department of Environment (DoE) established in 1977 under the Environment Pollution Control Ordinance, 1977 still functions under the ECA. The DoE has been placed under the MoEF as its technical wing and is statutorily responsible for the implementation of the Environment Conservation Act, 1995. The Ministry of Planning also has an environmental section to monitor the environmental aspects of the projects of the Government of Bangladesh.

Decentralisation of environmental governance, albeit at a nascent stage, has been attempted through the four tiers of local governments proposed for the different administrative units.

## **5. POLICIES AND INSTITUTIONAL RESPONSIBILITIES**

**Fourth Five Year Plan (1990-95) 1990** enunciated the following critical objectives:

- 1) Control pollution and degradation related to soil, water and air
- 2) Promote environment friendly activities in the development process
- 3) Preserve, protect and develop the natural resources base
- 4) Strengthen the capabilities of public and private sectors to manage environmental concerns as a basic requisite for sustainable development
- 5) Create public awareness for participation in environmental promotion activities

**Ministry of Environment and Forest National Environmental Policy 1992** asserted the following aims:

- 1) Maintenance of the ecological balance and overall progress and development of the country through protection and improvement of the environment
- 2) Protection of the country against natural disaster
- 3) Identification and control of all types of activities related to pollution and degradation of the environment
- 4) Environmentally sound development in all sectors
- 5) Utilisation of all natural resources with a view to achieving long-term environmental sustainability
- 6) Active involvement in all environmental fields within international initiatives

#### **National Environment Management Action Plan (NEMAP) 1992**

The Action Plan proposes actions to achieve the objective mentioned in the National Environmental Policy. This covers many diverse fields relating to the environment with an emphasis on the increased public participation in the process of formulating the plan.

#### **Ministry of Environment and Forest Fifth Five Year Plan (1997-2002) 1997**

The object of this plan was to protect and preserve the environment by putting in place adequate regulatory regimes and effective institutions, keeping in view the need for regeneration, recycling and optimum exploitation of natural resources consistent with sustainable development.

#### **Ministry of Environment and Forests**

Various policies adopted by the government emphasise management and conservation of environmental resources. These policies, though not enforceable, provide a basis for directing the administration of environmental regulations by the concerned agencies. Being more recent documents, these policies reflect on the progressive notions of environment and development. Policies on environment (1992), Water (1999), fishery (1998), energy (1996), industry (1999) and agriculture (1999) require concerned administrative agencies to promote conservation and undertake development programs and activities in harmony with nature and the eco-system.

#### **National Energy Policy**

The National Energy Policy, 1996 is a policy committed to ensuring that development programs are environmentally sound and cause minimum damage to the environment. The Policy concedes that unplanned and uncontrolled use of biomass fuels (contributed 65.5% of primary energy in 1990) are causing environmental degradation and, as such, is

attempting to ensure that the demand of bio mass fuel in excess of sustainable limits is to be met by commercial fuels.

### **Water Policy**

Water for the environment is a notable feature of the Water Policy. The Policy recognises that continued development and management of water resources should include the protection and preservation of the environment and its bio-diversity. As per the Policy, environmental needs and objects would be treated equally with the resource management needs. All water related agencies and departments have been required to give full consideration to environmental protection, restoration and enhancement measures consistent with the National Environment Management Action Plan (NEMAP). NEMAP is the only policy document of the Government of Bangladesh that has been prepared with full public participation. The Policy document is now being implemented under the Sustainable Environment Management Program (SEMP) of the MoEF and UNDP.

### **Industrial Policy**

The Industrial Policy seeks to promote privatisation and modify the role of the government to a facilitator instead of a regulator. The Policy envisaged that industrial development would be sustainable from the point of view of environmental concerns and resource availability.

### **Agriculture Policy**

Section 17 of the Agriculture Policy records concern over the increased salinity of soil and excess use of chemical fertilizer and pesticides in an effort to stimulate production. The Policy admits that saline water of the shrimp farms has causes environmental pollution and calls for the mitigation of this problem with the proper implementation of the Fishery Policy.

### **Land Use Policy**

Notified in the official gazette on 21 June 2001 the Land Use Policy states the following objectives:

- (a) To prevent the current tendency for gradual and consistent decrease of cultivable land for the production of food to meet the demands of the expanding population;
- (b) To introduce a 'zoning' system in order to ensure the most efficient use of land in different parts of the country, according to their local geological differences. This also requires the logical control of the unplanned expansion of residential, commercial and industrial construction;
- (c) To ensure the best way of utilising the *char* areas naturally rising out of river beds during dry months for the rehabilitation of the landless people;
- (d) To take necessary measures to protect land, particularly government-owned land, for different development programs that might be necessary in the future;
- (e) To ensure that land use is in harmony with the natural environment;
- (f) To use land resources in the best possible way and to play a supplementary role in controlling the consistent increase in the number of landless people. This



incorporates and underlying policy of the elimination of poverty and the increase of employment;

- (g) To protect natural forest areas, prevent river erosion and to prevent the destruction of hill areas and hillocks;
- (h) To prevent pollution;
- (i) To ensure the minimal use of land for the construction of both government and non-government multi-storied offices.

In relation to usage of the main land use areas in Bangladesh, the Policy identifies agriculture, housing, forests, rivers, irrigation and sewerage canals, ponds, roads and highways, railways, commercial and industrial establishments, tea estates, rubber fields, horticulture gardens, the coastal belt, sandy riverbeds and *char* areas.

## 6. LEGISLATION

A total of 23 laws, which contain provisions regarding environmental conservation and control of environmental pollution from various sources, have been identified as operational in Bangladesh. Furthermore, research by the environmental regulatory regime shows that there are approximately 185 laws that are relevant to, and have some bearing on, the environment. These laws provide for measures relevant to environmental offences and, by prescribing or prohibiting certain activities, establish the appropriate rights and duties. The Bangladesh Environmental Conservation Act 1995 is among these laws and was enacted to control and mitigate pollution and promote environmental conservation. This has come into force over Bangladesh as a whole through administration and notification by the Ministry of Environment and Forests (MoEF). Within this legislative framework are similar imperative enactments. The Penal Code 1860, has provisions to monitor pollution in the atmosphere, the Fish Conservation Act 1950, provides measures to ensure undisturbed spawning grounds, the Bangladesh Wildlife (Preservation) Order 1974, prohibits interference with specific species of wildlife etc. Additionally, various other pieces of legislation contain provisions to address the pollution of air, soil, water and other components of the environment. These legislative requirements cover areas which *inter-alia* include industrial, vehicular and marine pollution and prohibit certain activities that may destroy and damage the surrounding ecosystem of all living creatures.

In response to the growing consciousness of global environmental threats, Bangladesh has so far signed, ratified and acceded to 22 international conventions, treaties and protocols related to the environment. The most significant ones were signed at the UN Conference on Environment and Development (UNCED), held at Rio de Janeiro, Brazil in 1992. The Agenda 21, Climate Change Convention and Bio Diversity Convention is one convention that is of particular importance in the sphere of environmental conservation. The Agenda 21 provides the basis for attaining sustainable development through policies initiated and coordinated at the National level.



## CHAPTER VII

### JUDICIARY AND ENVIRONMENT

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**Key Issues:** The pending nature of cases; technical and scientific nature of cases; Cumbersome Procedures; Dissemination of Judgments; Training of Judges and Advocates; Execution of and Compliance with Courts Orders; and Education and Awareness

**Key Institutions:** Supreme Courts; High Courts; District Courts; Tribunals, Authorities; Agencies etc. Appellate Division; Additional District and Session Judge Court; Sub-judge and Assistant Session Judge Court; Assistant Judge Court; District Magistrate Court; Thana Magistrate Court; Metropolitan Magistrate Court; Division Special Judge Court; Special Tribunal Judge Court; Small Case Court; and Village Court

#### 1. INTRODUCTION

In relation to the growing activism by the civil society, the judiciary in Bangladesh has begun to respond to cases seeking environmental justice. Judicial activism contributes to the proper implementation of environmental laws and allows the vast majority of the disadvantaged section of the community to access the justice system.

As a result of the progressive interpretation by the judiciary of some constitutional and legal provisions, ‘public interest litigation’ (PIL) and the ‘right to environment’ have received express legal recognition. The cases decided by the judiciary have tended to activate the Executive, create wider awareness and have affected the value systems of the administrators and society. In the cases relevant to issues of the environment that have been decided by the judiciary, directions have been given to the government agencies to perform their statutory functions. All these decided cases have addressed issues on sustainable development, precautionary principle, participation and access and can be considered as landmark decisions.

The increase in public interest litigation in Bangladesh, reflects the confidence that the environmentalists and the civil society places in the judiciary to redress the grievances of the downtrodden and the deprived. In deciding some of the cases the judiciary has endorsed the innovations that justice requires and in one recent incident, the High Court even intervened and issued a *suo moto* rule to protect a public garden from encroachment. Such judicial action exemplifies the growing role of the judiciary in environmental protection.

Great advances have been made in the region in relation to access to justice, as there is now extended standing for aggrieved parties, which has been complemented by an expansion of the 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 that is of great public concern. The 1996 Supreme Court of Bangladesh (Appellate Division - Civil) 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 was seriously threatened by the implementation of a flood control plain. The Court concluded that the petitioner should be given *locus standi* to maintain the writ position, as the cause the Association *bona fide* espoused, both in respect of fundamental rights and constitutional remedies, is a cause of an indeterminate number of people in respect of a subject matter of great public concern.

In Bangladesh a landmark judgment delivered by the Supreme Court of Bangladesh in 1999 held that an Association of Environmental Lawyers had standing to present a writ petition in the public interest. The petition had raised questions regarding the legal validity of a flood action plan prepared without any participation of concerned and affected persons, which threatened to adversely affect the lives and livelihood of substantial sections of people and to have adverse environmental and ecological ramifications. The Supreme Court has validated other public interest petitions relating to industrial safety (fires in garment factories), environment (the gas explosion in Magurchhara), corruption (illegal granting of public land without following proper procedures) and inhumane custodial practices (imposition of bar fetters in judicial custody and confinement of rape victims (in handcuffs) and other women in "safe" custody).

In the case of *Dr. Mohiuddin Farooque v Bangladesh and Others*, Civil Appeal No. 24 of 1995, 17BLD (AD) 1997, Vol. XVII, pp 1-33, 1 BLC (AD), 1996, pp 189-219, in Okidi C. (ed), *Compendium of Judicial Decisions on Matters Related to Environment*, Vol. I- National Decisions, December 1998, UNEP, the Bangladesh Environmental Lawyers' Association (BELA) alleged that no EIA had been undertaken in relation to certain PAP Projects when they were required. The matter for the court to decide was whether BELA had a sufficient interest in the matter to acquire standing under Article 102 of the Bangladesh Constitution. The Court held that if someone pursues a public cause involving a public wrong or injury, he need not be personally affected or have a personal interest. He must, however, be espousing a *bona fide* public cause and not be a mere busybody, or interloper or pursuing some other dubious goal such as publicity or serving a foreign interest".

This decision is based upon the liberal interpretation of Article 102 of the Bangladesh Constitution, which gives the Supreme Court the jurisdiction to hear a complaint from any ~~person aggrieved~~". The Court decided that Article 102 is to be read in the context of the whole scheme and objective of the Constitution, including Article 7(1), which vests all power in the people and is to be exercised for the people's welfare. Therefore Article 102 not exclusively for the benefit of aggrieved individuals but also citizens as a whole when there is a public injury or public wrong or breach of a fundamental right affecting an indeterminate number of people. On the facts, BELA was espousing a public cause in respect of fundamental rights and constitutional remedies. It was pursuing a cause affecting an indeterminate number of people and devoted its resources to the cause. BELA was acting bona fide and was not pursuing an oblique purpose nor acting as a "mere busybody". Therefore BELA was held to satisfy the threshold stage of locus standi and was enabled to pursue its claim.

The Constitution is the supreme embodiment of the will of the people of Bangladesh and, as such, all actions must be taken for the welfare of the people for whose benefits all powers of the Republic vest. If justice is not easily and equally accessible to every citizen there can hardly be a Rule of Law. If access to justice is limited to the rich, the more advantaged and more powerful sections of society, then the poor and the deprived have no stake in the Rule of Law and they will be more inspired to turn against it. Ready and equal access justice is a *sine qua non* for the maintenance of the Rule of law. Where there is a written Constitution and an independent judiciary and the wrongs suffered by any section of the people are capable of being raised and heard publicly in a court of law, there must be respect for the Rule of Law. The preamble of our institution contemplates a society where there is an unflinching respect for the Rule of Law and the welfare of citizens.

## **2. PRINCIPLES APPLIED, ADOPTED AND DEVELOPED BY THE JUDICIARY**

The Constitution of Bangladesh has the expression ~~aggrieved persons~~", which must be understood in light of the pronounced schemes and objectives of the Constitution. The Constitution is a living document, which should be construed liberally to accommodate the changing needs of the time and the demands of the people. Referring to the various provisions of the Constitution of Bangladesh when interpreting areas of the law ensures that liberty and socioeconomic justice is purposefully applied to all categories of the population.

As for Part II of the Constitution, which contains Fundamental Principles of State Policy, Article 8(2) provides that the principles set out in this Part ~~shall~~ be a guide to the interpretation of the Constitution and of the other laws of Bangladesh". Thus it is constitutionally impermissible to ignore any consideration of Part II of Constitution when interpreting Article 102. As for (iv), Part III of the Constitution bestows Fundamental Rights on the citizens and other residents of Bangladesh. Article 44(1) guarantees the

right to move the High Court Division in accordance with Article 102 (1) for the enforcement of these rights. Therefore, Article 102(I) is a mechanism for the enforcement of Fundamental Rights, which can be enjoyed by an individual alone in so far as individual rights are concerned, but which can also be shared by an individual in common with others when the rights pervade and extend to the entire population and territory. In particular, Article 102 (1) cannot be divorced from Part III of the Constitution. As for (v), the other provisions of the Constitution, which will vary from case to case, may also come to play a role in interpreting Article 102 of the Constitution.

Article 102 therefore is an instrument and a mechanism, containing both substantive and procedural provisions. It allows the people as a collective personality, and not merely as a conglomerate of individuals, to realise the objectives, purposes, policies, rights and duties which are entrenched in the Constitution. With the power of the people looming large behind the Constitution horizon it is difficult to conceive of Article 102 as a vehicle for realising exclusively individual rights from individual complaints. As the Supreme Court is a vehicle devised by the Constitution for the exercise of judicial power of the people on behalf of the people, the people will always remain the focal point of concern of the Supreme Court. Thus, any actions of the Supreme Court in disposing of justice or propounding any judicial theory or interpreting any provision of the Constitution, will be exercised with considerations of the public interest firmly in mind. Viewed in this context, the interpretation of the words “any person aggrieved” as meaning only individuals and excluding the consideration of people as a collective and consolidated personality, is an interpretation in contravention of the basic premise of the Constitution. Thus there is no question that the enlargement of locus standi or legislation by the Court is constitutionally sanctioned.

In the context of a capitalist, laissez faire concept of private ownership of the instruments and means of production and distribution, individual rights are paramount and the judiciary exists primarily to protect the capitalist rights of the individuals. However, in the Constitution, Article 13, which is a Fundamental Principle of State Policy, provides that the people shall own and control the instruments and means of production and distribution under three forms, namely, (a) state ownership, that is, ownership, by the State on behalf of the people; (b) cooperative ownership, that is, ownership by cooperatives on behalf of the members and (c) private ownership, that is, ownership by individuals. Where there is a State ownership on behalf of the people of the instruments and means of production and distribution the concept of exclusive personal wrong or injury is hardly appropriate. Under these circumstances the High Court Division cannot adhere to the traditional concept that it can only invoke its jurisdiction under Article 102 if a person has suffered a legal grievance or injury or an adverse decision or a wrongful deprivation or refusal of his title to something. This would be a too limited interpretation of a “person aggrieved”. This is not to say that Article 102 has nationalised each person’s cause as every other persons cause.

While the traditional judicial view of legal standing remains when aggrieved individuals are concerned, there is a different perspective when a public injury or public wrong or

infraction of a fundamental right affecting an indeterminate number of people is involved. Essentially, it is not necessary, in the scheme of the Constitution for the multitude of individuals who have been collectively wronged or injured to each invoke the jurisdiction under article 102 in a multitude of individual writ petitions. In so far as it concerns public wrong or public injury or invasion of fundamental rights of an indeterminate number of people, any member of the public, being a citizen, suffering the common injury or common invasion in common with others or any citizen or an indigenous association, as distinguished from a local component of a foreign organisation, is a person aggrieved and has the right to invoke the jurisdiction under Article 102.

In light of the apprehension to adopt this wider interpretation because of a fear of opening the proverbial floodgates, the people as a whole may represent a flood but the Constitution is the filter through which the people control [their] own entry. In this sense the Courts will be prudent enough to recognise those with legitimate actions as well as those who masquerade under the name of the people. In any event, taking up the cause of the people at one's own expense is a rare phenomenon and not a commonplace occurrence. In respect of this approach to interpretation of the Constitution for the people as a whole as well as individually, the final decision of the Court in the afore mentioned case was that the association appellant was wrongly held by the High Court Division not to be a "person aggrieved". Thus in light of the facts and circumstances of the case it was held that the appellant was "any person aggrieved" within the meaning of both Article 102(1) and Article 102(2)(a) of the Constitution. The appeal was allowed and Writ petition No.998 of 1994 remanded to the High Court Division for hearing on merit.

The court nevertheless upheld the traditional rules relating to locus standi, being that judicial remedy is available only to a person who is personally aggrieved. This principle is based on the theory that the remedies and rights are correlative and therefore only a person whose own right is violated is entitled to seek remedy. In cases of private individual and private law this principle can be applied with some strictness, however, in public law this doctrine cannot be applied with the same strictness as that is tantamount to ignoring the good and well being of citizens for whose benefit the State and the Constitution exist. BELA is actively working in the field of environmental problems of the Bangladesh. It is to be kept in mind that BELA had no direct personal interest in the matter, as strictly speaking it is not an aggrieved person with respect to the literal interpretation of the term. In the Constitution the expression aggrieved person has not been defined. Thus in light of this ambiguity and uncertainty, any expression appearing in the Constitution must get its substance from the different provisions of the Constitution and from the scheme and objective of the Constitution itself.

## CHAPTER VIII

### SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: WATER

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

**Policy Framework:** Fourth and Fifth Five-Year Plan, 1990-2002; National Environment Policy, 1992; National Environment Management Action Plan, 1992;

**Key Legislation:** Water Supply and Sewerage Authority Ordinance 1963; Laws and Regulation on Industrial Wastewater Control Effluent Standards Environmental Pollution Control Ordinance 1997; Environmental Conservation Act of 1995; Environmental Conservation Rules of 1995; Water quality standard Environmental Pollution Control Ordinance 1997; Effluent standard;

**Key Institutions:**

Ministry of LGRD & C; Ministry of Water Resource; Ministry of Environment and Forest; Ministry of Agriculture; Ministry of Health and Family Welfare

#### 1. INTRODUCTION

Traditionally, water sources depend on rainfall and surface water. Groundwater is also the major source of drinking and industrial water for its abundance and stable supply from aquifers. More than 200 rivers cross the country form a complex network for water supply. Most of these cross boundary rivers are tributaries or distributors of Ganges-Brahmaputra-Meghna rivers where 57 rivers originate outside the boundary of Bangladesh. The total length of river courses including their tributaries within Bangladesh is about 24,140 km covering 9,770 km<sup>2</sup>. Salinity of the river water seasonally increases in estuary areas, which have a critical limit for crop production. Water with high salinity moves into inland in May. Low flow of Ganges River induces high salinity in the Southwest region. This causes degradation of the natural mangrove in Sundarban, the only Ramsar site in Bangladesh.

Sewerage systems are partially installed only in Dhaka. In other regions, untreated wastewater is discharged directly to rivers. Rain water flows into sewerage systems at the time of heavy rain and wastewater flows upwards, as the capacity of sewerage system is limited. Toilets are built on the water and feces are directly deposited into the river.



There are about 7000 large medium industrial units operating in Bangladesh, with major concentrations of these in Dhaka, Chittgong and Khulna and a few smaller pockets, mostly situated on the banks of the rivers. The industries are discharging their effluent directly to the rivers or nearby canals causing frequent fish-kills and adversely affecting the health of residents of adjoining areas who use the contaminated water for drinking, washing, bathing etc.

Pollutants/contaminants present in industrial effluent can be categorised as follows:

- (a) Non-specific, bio-degradable organic materials that deplete oxygen (tanneries, textiles, food products, pulp and paper)
- (b) Refractory, xenobiotic compounds that may induce varying levels of chronic responses in aquatic life and/or direct human users (textiles, in the form of synthetic dyes and organic chemical industries such as in Chittagong).
- (c) Nitrogen compounds that are either toxic for specific receptors, chemically reducing (i.e. exerting demand on oxygen) or that stimulate certain types of biological growths causing imbalances in aquatic ecology (almost exclusively from the urea fertilizer industry, but also from tanneries) and
- (d) Pollutants susceptible to bio-accumulation in the food chain. This impact is probably less significant from industrial discharges than from agricultural chemicals. Bio-accumulation is possible with certain heavy metals, as with some organic compounds used in textiles and found as intermediate and final products in various types of organic chemical industries. The Bangladesh Chemical Industries Corporations DDT plant in Chittagong issues and manufactures bio-accumulative compounds that may exert a heavy toll on certain components of the biological ecosystem.

## 2. WATER POLLUTION

Major industrial sources of water pollution are the following industries:

- 1) Non-ferrous metal
- 2) Industrial chemical production
- 3) Tanneries
- 4) Refineries
- 5) Pharmaceuticals

The main industrial areas are Dhaka, Chittagong, Khulna, and Bogra districts. The Department of Environment has listed 1,176 factories that cause pollution. These are categorised into the following 9 types:

- 1) Chemical including pharmaceutical
- 2) Paper and pulp
- 3) Sugar
- 4) Food and tobacco
- 5) Leathers
- 6) Industrial dyes
- 7) Petroleum
- 8) Metals
- 9) Power generation

Feces also pollutes due to the lack of proper sanitation facilities in spite of the increasing population both in rural and urban areas. This results in high levels of nitrate in surface water, eutrophication and serious implications of water-borne diseases. Fertilizers and agrochemicals including pesticides are suggested to cause pollution. The average annual consumption of fertilizers is estimated to be 100 kg/ha according to the National Minor Irrigation Development Project.

### **Groundwater**

Arsenic contamination of groundwater is a serious problem especially for tube wells. Arsenic content exceeds 0.05 mg/L as the national standard. It is estimated that more than 20 million people drink arsenic contaminated water. Other groundwater pollution is evidenced by the salinity in coastal areas, the Southeast and the Southwest region; Iron in the central part of the country; Manganese Boron in western, central and northern regions; and Phosphorus, phosphate and nitrate in all parts of the country, especially in the coastal area.

Schedule 10 of Bangladesh Environment Conservation Rules, 1997 provides the water standard and the standard of liquid discharges from the industries respectively. The other relevant legislation includes: Environmental Conservation Act of 1995; Environmental Pollution Control Ordinance 1997; Effluent standard; Drinking water quality standard; Result of water monitoring;

## **3. OTHER POLLUTION**

### **Sediments**

Sediment is significantly increasing in the coastal areas of Bangladesh. Large volumes of sediments run off through Ganges River and the Brahmaputra River to the coastal area.

### **Solid Waste Management**

In Dhaka, 3,000 tons of waste is generated everyday. Wastes are disposed at 4,500 collection points, among which 1,950 are concrete made and 2,450 are street bins. Nearly

5,000 sweepers are engaged in the collection services by hand cart. 184 trucks and 2,080 hand carts are used to transport this waste to landfill sites or open dumps. Collection services are supervised by using a telecommunication network, wireless sets, jeeps and motorcycles. However, the solid waste management system is inadequate. Uncollected wastes are burned in improper ways and illegally disposed of by dumping into rivers and canals. Furthermore industrial waste and medical waste is not properly dealt with and is disposed with other general waste.

### **Energy Conservation and Alternative Energy**

According to the Fourth Five Year Plan the energy sector was emphasised. Promotion of natural gas utilisation, energy conservation, the high efficiency electricity supply and the promotion of NGO's participation to the biomass utilisation program are presented as targets. Despite this comprehensive premise actual plans to achieve these targets are not mentioned. A hydropower plant exists at Kaptai in southeastern part of the country. The plant has 230 MW of capacity and generates 5 to 7 % of the total electricity generation. Primary Energy Production (1998): Types Calories (Unit: petacalories) Share (%) Coal and lignite 2.3 Natural gas 96.3 Geothermal and wind 1.4 Nuclear Biomass Source.

### **Water Resources**

Traditionally, water sources depend on rainfall and surface water. Groundwater is also the major source of drinking and industrial water because of its abundance and stable supply from aquifers. More than 200 rivers cross the country form a complex network for water supply. Most of these cross boundary rivers are tributaries or distributors of Ganges-Brahmaputra-Meghna rivers where 57 rivers originate outside the boundary of Bangladesh. The total length of river courses including their tributaries within Bangladesh is about 24,140 km covering 9,770 km<sup>2</sup>. Salinity of the river water seasonally increases in estuary areas, which have a critical limit for crop production. Water with high salinity moves into inland in May. Low flow of Ganges River induces high salinity in the Southwest region. This causes degradation of the natural mangrove in Sundarban, the only Ramsar site in Bangladesh.

### **Wastewater Management**

Sewerage systems are only partially installed in Dhaka. In other regions, untreated wastewater is discharged directly to rivers. Rain water flows into sewerage systems at the time of heavy rain and wastewater flows upwards because the capacity of the sewerage system is limited. Toilets are built on the water and feces are directly deposited into the river. The institutions which are actively working in the area are: Department of Public Health Engineering, Ministry of Local Government, Rural Development and Cooperatives, Water Supply and Sewerage Authority.

#### **4. LEGISLATION**

In Bangladesh there exist various legislative enactments for the conservation of water from various sources. Most importantly the following legislation has been legislated for by the Government of Bangladesh: Water Supply and Sewerage Authority Ordinance 1963; Laws and Regulation on Industrial Wastewater Control Effluent Standards Environmental Pollution Control Ordinance 1997; Environmental Conservation Act of 1995; Environmental Conservation Rules of 1995; Water Quality Standard Environmental Pollution Control Ordinance 1997.

## CHAPTER IX

# SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: ATMOSPHERE

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**Key Issues:** Pollution Prevention and Control; Vehicular Pollution; Indoor Pollution; Industrial Pollution; Human Health; Fuel Quality;

**Policy Framework:** Fourth and Fifth Five-Year Plan, 1990-2002; National Environment Policy, 1992; National Environment Management Action Plan, 1992;

**Key Legislation:**

Environmental Conservation Act of 1995 Environmental Conservation Rules of 1995; Ambient Air Standards; Environmental Pollution Control Ordinance 1997; Emission Standard (fixed or mobile); Factories Act 1965; Motor Vehicles Act 1939; The Environmental Policy of 1992

**Key Institutions:**

Ministry of Environment and Forest; Department of Public Health and Engineering (DPHE)

### 1. INTRODUCTION

It is the post-industrial era, where civilisation has risen to possess all of the amenities of life and science and technology continues to advance at a drastic pace. In light of this rapid industrialisation engine driven transports continue to provide the basic vehicle of today's civilisation. This mode of transport has failed to incorporate the elements of sustainable development, and as a result, it has caused degradation of the global environment, which now faces a serious threat from multifaceted environmental problems. In addition the problem becomes even direr, as the primary pollutants that interact in presence of sunlight may create secondary pollutants like ozone, photochemical smog, acid mists, peroxy accetyl nitrate, formaldehyde, etc. in the atmosphere.

### 2. AIR POLLUTION IN DEVELOPING COUNTRIES

Air pollution is likely to be one of the highest environmental threats in the developing countries in the next millennium. Today, environmentalists and members of the public in

general are concerned about this situation. In most third World cities, the enormous pressure for shelter and services has fractured the urban fabric. Much of the housing used by the poor is decrepit. So too, is the essential infrastructure of the city, public transport is overcrowded and overused, as are roads, buses and trains, A growing number of urban dwellers suffer from a high incidence of acute respiratory diseases, asthma etc. which are inextricably linked to pollution. In fact, air pollution should not have been the major concern in third world cities because of lower levels of industrial development. However, in reality, hundreds of cities have a high concentration of industry and increasing levels of traffic. Consequently, air pollution problems have increased rapidly. The following Asian Cities e.g. Shenyang, Bombay, Beijing, Calcutta, Shanghai, Bangkok, Jakarta, Kuala Lumpur, Delhi, Manila, Lahore, Dhaka are the worst polluted cities in terms of air pollution according to ESCAP State of Environment Report (1990-1995).

The environmental scenario in Bangladesh has changed considerably following rapid industrialisation. The Ministry of Environment and Forest, and the DoE were created in 1989. As a signatory to Agenda 21, Bangladesh is committed to implement this international legal instrument through national programs and policies. The Environmental Policy of 1992 was an important development in this regard. Further, the Environment Conservation Rules, 1997, were approved by the Bangladesh National Assembly to restrict and mitigate the ever-growing environmental problems in the country.

### 3. AIR POLLUTION IN DHAKA

Air pollution levels are largely dependant upon the meteorological condition and topography in a given area in a particular time. Although suspension time is reduced by rain, wind dispersion exacerbates problems of pollution. The pollution level is also being affected by (i) Dilution and Dispersal and (ii) Concentration and confinement. The topography of Dhaka is flat terrain, which is good for dispersion but the type of road network of Dhaka city, the vehicle mix (specially the slow moving Rickshaws), the traffic system and management are *some* of the basic reasons why vehicular sources enhance air pollution in Dhaka City.

Current DOE data on ambient air quality amply demonstrates that Dhaka City's air quality is terrible. In terms of the presence of Suspended Particulate Matter (SPM), the situation is even worse. It is as much as high 4 to 5 times more than the allowable limit. In terms of gases, the concentration of nitrogen oxides (NO<sub>x</sub>) is still within limit (without occasional shoot-up) but concentration of sulfur oxides (SO<sub>x</sub>) exceeded the allowable limit quite long ago. The reason for the higher concentration of sulfur oxides in the air is due to the higher sulfur content in our imported oil. The other issue is the lead content in the ambient air. DOE conducted a series of tests collecting ambient air samples from different points of Dhaka City during 1966-1997 covering residential. At a height of one metre from ground level the highest concentration in a commercial area was observed to be 25.1.84 nanogram/cubic meter. However, recent DOE data provides

evidence of a decreasing trend in relation to previous years. Auto-exhaust is the major cause of air pollution especially in Dhaka City where the agglomeration of Vehicle fleet is higher than any part of the country, which is estimated to cause 50-60% of total air pollution load in Dhaka. The emission of auto exhaust can be classified in to the following categories:

- i) Petrol exhaust such as cars, three wheelers, two wheelers; and
- ii) Diesel exhaust such as trucks, buses, minibuses etc.

Dhaka City's air is also polluted with carbon monoxide (CO) and Hydrocarbon from vehicular sources. This is largely a result of the incomplete combustion of fuels in most of our vehicles due to improper maintenance of the engines and use of adulterated fuel and lubricants. Two-stroke engine driven vehicles are the worst among the vehicles in terms of emitting these noxious gases. It has been identified that two-stroke engines are also a major contributor to ambient HC and PM concentrations. There are about 30000 two-stroke three wheelers (per year increase 3500), 2000 two-stroke large tempo, (per year increase 200) and 3000 four-stroke three wheelers (per year increase 300) in Dhaka City.

#### 4. INSTITUTIONAL CHALLENGES

Recently the Government has taken many important steps to control the pollution level in Dhaka City. Some of them are mentioned below:

- Banning new registration of two-stroke engines, and phasing out of existing two-stroke engines within 3-5 years.
- Stringent enforcement of regulation on roadworthy test, emission checks and fitness tests.
- Conversion of Petrol and Diesel driven vehicle to CNG.
- Import of unleaded and low sulfur gasoline for improvement of air quality.
- Dhaka Urban Transport Project (DUTP) has been taken at a cost of US \$237 Million under World Bank assistance. Under this project, major improvements of the road networks of Dhaka will be taken. These include:
  - (i) Construction of Road Intersections.
  - (ii) Fly-over.
  - (iii) Foot-overpass.
  - (iv) Construction of Bus and Truck Depot and
  - (v) Development of parking facilities, etc.

It is expected that by improving the transport network of Dhaka city, the level of Air Pollution decrease to an allowable limit. Under the million dollar Air Quality Management Project (AQMP), also conducted under World Bank assistance, which will be implemented shortly, DOE will set up check posts in Dhaka city and Chittagong city to check the level of emission from vehicles, including in some other major cities. Under this project, vehicle inspection, air quality monitoring, an awareness raising campaign, emission inventory and driver and mechanic education will be undertaken. The key components are:

- (i) Improved enforcement;
- (ii) Setting appropriate standards;
- (iii) Piloting of pollution control technologies for two-stroke, three-wheelers and diesel vehicles; and
- (iv) Better monitoring and dissemination of information; and overall evaluation.

These components will help to lay a foundation for strengthening institutional capacity for air quality management and developing a comprehensive long-term strategy to reduce air pollution in Dhaka City and other cities. This program will also help to improve the institutional capacity for air pollution monitoring and data analysis in Bangladesh, which is crucial to designing further interventions to control urban air pollution. These activities will also raise stakeholder awareness of their respective rules as regards the issues and options relating to vehicular air pollution control.

## 5. VEHICLE EMISSIONS

The concentration of vehicles in urban areas, as well as the lack of regulations on air pollution prevention has resulted in the air pollution of these areas. Trucks and buses are the primary contributors to these incredibly high pollution statistics.

**Case Study – Dhaka** is now one of the most densely populated and busiest cities in the world. Following its independence, the importance of Dhaka City has increased in many respects. A great proportion of the city's development particularly in relation to the growth of industrial and commercial sectors has been unplanned. To coincide with this rapid and unplanned development the vehicle fleet in Bangladesh and particularly in Dhaka has increased very dramatically, growing more than 10 percent per year.

Much of the growth has occurred in the fleet of three wheelers, which are powered by two-stroke engines that are not well maintained and have high exhaust emission. In Dhaka City, the main contributor of air pollution is the transport sector followed by industrial units, garbage and other biomass burning by the slum dwellers and the burning of coal and wood by the large number of brick fields in and around the city.

In Chittagong City, vehicular emission and industrial emissions almost equally contribute to the air pollution problem. In other cities the problems are not yet acute. In general, rural areas are still outside the effect of air pollution, with the exception of emissions from brick kilns, which are widespread throughout the countryside.

## 6. INDUSTRIAL EMISSIONS

Air pollution by industrial emission has not yet been reported, as Bangladesh is still not greatly industrialised. Factories are located intensively at three major cities, Dhaka, Chittagong and Khulna. Factories of pulp, cement and soda emit particle matters.



## 7. LEGISLATION

The Environmental Conservation Act of 1995; Environmental Conservation Rules of 1995; Environmental Pollution Control Ordinance 1997; Factories Act 1965; Motor Vehicles Act 1939

The first regulation related to the environment in Bangladesh was the Factory Act of 1965, which addressed workers health-related issues. This was followed by the earliest recorded environmental protection enactment, known as the “Water Pollution Control Ordinance, 1970”. However, none of these ordinances specifically addressed air pollution problems. This major oversight may have been due to the almost negligible air pollution problems at that time. In view of growing environmental pollution, this ordinance was repealed and the Environmental Pollution Control Ordinance (EPC) 1977, was promulgated. This ordinance provided for the control, prevention and abatement of pollution of the environment in Bangladesh. It dealt with pollution of air, surface and ground waters and soil. Although the order passed under the Environment Protection Control Ordinance 1977 was legally in place, implementation of environmental laws never took place.

Therefore, the Bangladesh National Environmental Policy 1992, Environmental Conservation Act 1995, and the Environmental Conservation Rules (ECR) 1997, now contain relevant policies, such as authority to inspect and regulate facilities, collect samples, impose civil penalties, adopt rules, and implement environmental clearances (see Table 4). Under the Rules of 1997, the following standards have been set.

- Ambient Air Quality Standards
- Vehicular Exhaust Emission Standards
- River Transport (Mechanised) Emission Standards for Gaseous Emission for Industries or Projects

## 8. IMPLEMENTATION MEASURES

A prerequisite to the formulation of effective and efficient policy for the control of air pollution is the availability of sufficient reliable data and an analytical framework to assess policy and technical options for control. The monitoring of ambient air quality and the compilation of emissions inventories will be strengthened in Dhaka through a program of phased investments in equipment and associated training. Monitoring of ambient air quality in Bangladesh is a very recent phenomenon, initiated on a very limited basis by the Department of Environment (DoE). To date, the DoE has set up four monitoring stations at four divisional towns: Dhaka, Chittagong, Khulna, and Bogra. In addition, the DoE occasionally conducts vehicular emission measurements in Dhaka city (the locations are: Tejgaon, Farmgate, Manik Mia Avenue, Gulshan, Lalmatia, and

Agargaon). According to various studies the worst affected areas in Dhaka city include: Hatkhola, Manik Mia Avenue, Tejgaon, Farmgate, Motijheel, Lalmatia, and Mohakhali.

This will be accompanied by technical assistance to generate the expertise necessary to develop dispersion models of ambient air quality and propose emission control programs and evaluate their costs, effectiveness and feasibility. The lessons learned from Dhaka, Bangladesh's largest city with the most urban air pollution problems could be very useful references for the other rapidly growing cities of Bangladesh.

Technology to reduce emissions from vehicles, in particular, the most highly polluting two-stroke and diesel engines will be tested through the proposed project, thereby providing a clearer picture of the relative cost-effectiveness of the control options available. The basis for a regulatory framework to control vehicular pollution will be established by supporting the development of appropriate standards to govern the quality of fuels, lubricants and emissions, and by providing experience with pilot emissions testing programs. Acceptance of these new technologies and regulations will be enhanced through training and public awareness to help stakeholders internalise the growing necessity for changes in behaviour. Implementation of all these measures are expected to bring significant improvement in the air quality of Dhaka city in the beginning of the next millennium.

## CHAPTER X

### SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: CHEMICALS AND WASTES

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**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:**

Fourth and Fifth Five-Year Plan, 1990-2002; National Environment Policy, 1992; National Environment Management Action Plan, 1992

**Key Legislation:**

Environment Conservation Act, 1995; Environment Conservation Rules, 1997; Municipality Ordinance 1977; Environmental Pollution Control Ordinance 1997; Environmental Pollution Control Ordinance 1997; Guideline for Solid Waste Management; The Pesticide Ordinance, 1971; The Pesticide Rules, 1985; Notification No. 6/Fertilizer- 21/94/100 dated 17-4-95; S.R.O No. 160.Law195 Fertilizer (Control) Orders, 1995 under Control of Essential Commodities Act, 1956; The Dangerous Drugs act, 1980; The Drugs (Control) Ordinance, 1982; The Petroleum Act. 1934; The Poison Act, 1919; The Explosive Act, 1923; The Penal Code, 1860; The Forts Act, 1908; The Chittagong Port Authorities Ordinance, 1976; The Coast Guard Act, 1994; The Factories Act, 1965; The Pure Food Ordinance, 1959.

**Key Institutions:**

Municipal governments; Ministry of Environment and Forest; The Ministry of Planning; National Environmental Council; International Institutes of Environment

#### 1. INTRODUCTION

A toxic chemical is one, which on contact with a living organism is capable of killing, injuring, or otherwise impairing that organism. These poisonous substances are hazards in that there is risk depending on the exposure and the manner in which such a substance is handled.

Even though Bangladesh is a developing country with a low level of development, little industrialisation and agrochemical input, it cannot live without using certain toxic chemicals or generation of toxic and hazardous wastes. Keeping pace with its program of industrialisation, the use of toxic chemicals and generation of toxic wastes is an increasing trend.

More than 5000 MT of different types of pesticides are used annually in Bangladesh. All these chemicals have different degrees of toxicity. It is known that local unauthorised companies formulate numerous pesticide products. These chemicals pose hazard during storage and use. The residues of these chemicals are washed out into the water bodies causing pollution and damage to the ecosystem.

Tanneries use chromium based compounds and other chemicals for leather processing and tanning purposes. Many of the chemicals are highly toxic and basic chromium sulfate (chromosol), of which about 3000 MT are used annually, is bio-accumulative in nature.

Chittagong Chemical Complex has been losing about 3.5 MT of mercury per year from its chlor-alkali plant for the last 27 years. This highly toxic metal leaves the plant with liquid effluent discharged into the river and gaseous materials are released to the atmosphere. An estimated 80 MT of mercury has been discharged into the river over 27 years.

In the textile dyeing and printing industry about 3000 MT per year of dyeing chemicals are used. A fraction of these chemicals contain heavy metallic compounds, which are toxic and have persistency in the environment. The industry also uses alkali, chlorine and toxic organic matter. With the current emphasis on setting up more textile industries in the country, pollution from effluents from this sector will increase. Electroplating industries use chlorinated hydrocarbons, chromium, nickel, copper, zinc and silver salts along with other chemicals like cyanide. Effluents contain these metal ions, acids, alkalis, cyanide, oil and grease, which are discharged without treatment.

Waste from paint industries contains heavy metals like chromium, lead, copper, cadmium, organic solvents cyanide etc. Nothing is being done at present to treat the waste before it reaches the ecosystem.

## **2. AGRICULTURAL WASTES**

Nearly 80% of the total population of the country lives in village areas and, as such, a majority of people depend upon agricultural activities for sustenance. This agricultural activity contributes a major amount of the entire level of solid waste that is generated in the countryside. Wheat and rice straw, jute sticks, leaves and residues of various other crops constitute this solid waste. It is difficult to quantify the exact amounts of such wastes generated from agricultural residues due to lack of any specific research and data on the subject. Fortunately however, these residues are mostly reused/either for animal fodder or auxiliary fuel for cooking and meeting other energy needs for rural people.

Some of these wastes are also used as manure in agricultural lands. Similarly, the wastes generated from agricultural farming activities are also reused in the manner described above.

### **3. DOMESTIC WASTES**

Domestic wastes are generated from kitchen and household activities, domestic animals, human excreta, sludge from pits and services latrines.

#### **Wastes from Trading centers and industrial activities**

Various types of wastes such as garbage, waste papers, cartons, discarded clothes and sweeping wastes are generated in huge amounts from the trading centers. Commercial and industrial activities produce wastes like scrap materials, residues, by-products, sludge, dusts, filter materials, catalyst wastes and sometimes hazardous, toxic and chemical wastes. Leaves, waste papers, grits and other forms of street litters are accumulated by street sweeping while construction wastes include all forms of discarded construction materials and demolition debris.

### **4. MUNICIPAL WASTES**

The cities and towns in Bangladesh are under increasing population pressure due to migration of rural people to urban centers. The present annual growth rate in urban centers varies between 3 and 8 per cent in comparison to the annual average growth rate of 2.01 per cent in Bangladesh. The quantity of municipal wastes generated in an urban center in Bangladesh is increasing proportionately with the increase in population. However, the creation and development of additional service facilities is severely inadequate in proportion to these increases in population and the quantity of municipal wastes. As a result, the degradation of the quality of urban environment has become a concern and the importance of efficient municipal waste management in the urban centers is being recognised. Municipal waste is perhaps one of the most potential sources of all problems associated with urban squalor and disease. It has been acknowledged that if proper waste management measures are not taken in the growing cities and towns, it will cause irrevocable degradation to the urban environment and exacerbate pollution problems. The responsibility of solid waste management according to the Paurosava Ordinance, 1977 resides with the Paurosava (Municipalities) and the sanitation and conservation section along with the engineering section of the Paurosavas.

### **5. PROBLEMS CAUSED BY SOLID WASTES**

All sorts of decomposable garbage and solid wastes including cow manure, oven ash, leaves, kitchen wastes, dust, refuges etc. are dumped into the open ground by every household in the country side. This produces a strong odor during the decomposition process and the dumping ground becomes the breeding place for mosquitoes and flies. Fly

menace in rural areas is an uncontrollable problem. Flies can carry germs of infectious diseases, which cause frequent epidemics in the rural areas of Bangladesh. The situation is aggravated by the systemic problems of mass illiteracy and lack of hygiene education in Bangladesh.

The market and trading wastes of the countryside are also dumped into the open ground areas beside the market and trading places, which is exacerbated by the absence of any form of waste treatment plants in Bangladesh. This is problematic for reasons of lack of hygiene and the furtherance of air pollution. Regulatory instruments for the control of industrial pollution are not sufficient to adequately manage the problem. As a result, all sorts of industrial wastes including solid wastes are discharged and thrown into rivers and natural water bodies in low-lying areas, causing water pollution. Most of the rural poor people drink river water directly and use it for cooking, bathing, washing and other domestic purposes. Thus chronic waterborne diseases are a common ailment among rural people. Due to poor socio-economic conditions and lack of hygiene education and proper waste management the rural people cannot maintain an environment free from pollution and disease.

## **6. RECYCLING OF SOLID WASTES**

In the developed countries, recycling and reclamation are being strongly promoted for conservation of resources and prevention of environmental degradation. Whilst extensive recycling is being practiced in the poorer parts of the developing country, it is not a part of national waste management strategies. In Bangladesh salvage activities are becoming more prevalent as they have some economic incentive and are in practice in all households of low to average income. Wastes of some market value are being reclaimed for salvaging in three stages. The housewives separate the refuse of higher market value such as papers, bottles, fresh containers, old cloths, shoes etc. and sell them to street hawkers. The second stage of salvaging is carried out mostly by children of slum dwellers, popularly known as Tokai. They collect the refuse and commercial wastes of low market value from bins and sweeping accumulation centers. The items include broken glass, cans, cardboard, waste paper, rags, plastics, metals and miscellaneous commercial waste discarded by the households. The third stage of salvaging is done by the refuse pickers when fresh refuse is unloaded by municipal trucks at final disposal site. The reclaimed materials reach the market through street hawkers who purchase the old materials directly from the households and through refuse collectors who reclaim materials from bins and final disposal sites. The materials collected from bins, sweeping accumulation centers and disposal sites require intermediate processes like washing, drying and sorting. The refuse dealers separate the materials in proper form and sell them to consumers, as well as supply them to appropriate processing/remolding mills and factories. The processed materials are recycled through the market.

Commercial and industrial areas and construction works produce some salvageable materials such as cloth and leather trimmings, building materials, waste boards, papers,

metal pieces etc. The construction wastes have good market value and are not usually collected by municipal trucks. The reclaimed MS bars and angles are sold to old materials dealers. The salvaged bricks are used in less important constructions. Broken bricks are used for making khoa. The debris of demolished concrete and mortars are also sold and used for stabilising roads and filling low-lying areas.

The wastes from the sweeping of open areas and roads are accumulated at various locations. The salvageable wastes are reclaimed, the leaves and grass are dried and used as fuel for cooking, and the dirt, debris and decomposable organic materials are collected by municipal trucks for final disposal.

## 7. HAZARDOUS WASTES – HOSPITAL AND INDUSTRIAL WASTE

World Bank Technical Paper 93 (on safe disposal of hazardous waste) defines —hazardous waste” as other than radioactive wastes, which by reason of their chemical reactivity or toxicity, explosive, corrosive or the other characteristics is likely to cause danger to health or environment whether alone or coming in contact with other substances.

Wastes are generated in almost all human activities - domestic, agricultural, commercial and industrial with wide range of hazard to human health and environment. They can be divided into two groups, one with potentially high risk of damage and the other with fewer hazards but larger in quantities. Typical wastes in the first category include highly flammable-spent solvents, toxic-persistent pesticides, chlorinated hydrocarbons, PCBs, metallic sludge, hospital wastes, tannery solid wastes; while the second category includes metalliferous sludge, fly ash, phosphogypsum etc.

There are thousands of chemicals being regularly used and new ones are regularly being added to the list. The list of toxic chemicals and hazardous substances is also becoming longer. As Bangladesh is not yet industrialised and modern agricultural practices are limited, the quantity and type of toxic chemicals and used hazardous wastes generated are also limited. However, as most of the end users are often poor or ignorant about the ill effects of these substances, they expose themselves and the environment to the damaging effects of these chemicals. Moreover, due to various reasons and needs, the use of toxic chemicals and hazardous substances are increasing in the country. Organ chlorine pesticides are still widely used in the country, and a good number of locally banned ones are being smuggled into the country. Untreated industrial wastes of a hazardous nature are being dumped indiscriminately into the water bodies from tanneries, textile dyeing and other industries. Moreover there is growing threat of illegal dumping of toxic wastes in to the country or its territorial Waters.

As Bangladesh is the lower riparian state in the South-eastern Himalayan basin, the hazardous wastes discharged in the river-systems at the upper reaches, affects the flora and fauna and degrades the riverine ecosystem of Bangladesh while passing through and flushing their wasters into the Bay of Bengal. The sharp decline in fresh water fish catch

and increased fish diseases in these rivers is understood to be partly due to this pollution problem.

## **8. INDUSTRIAL WASTE**

In Bangladesh there are about 1176 polluting industries that ultimately discharge their effluents into water bodies. The rivers of Dhaka, Narayanganj, Chittagong and Khulna are the main recipients of these untreated effluents which also contain heavy metals like mercury, copper, cadmium, lead, chromium, arsenic etc. and other toxic compounds like cyanide. Increased use of agro-chemicals including some toxic pesticides (the dirty dozen) is also threatening human health and environmental health. Since 1986 there has been a rapid increase in fish diseases, which may directly correlate with the increase in use of agro-chemicals and the disposal of untreated industrial and municipal wastes to water bodies.

The government has banned all the PIC listed chemicals except DDT, where left over supplies of about 500 tons of DDT is now used only for the vector borne diseases control program. The use of DDT for the preservation of dry fish is alarmingly high in Bangladesh. Very recently the government has imposed a ban on the use of DDT and certain other insecticides. It is worthwhile to mention that under the Ministry of Agriculture there is a committee that reviews the list of pesticides for use in the country.

Some chemicals are being used in some factories, plants or installations but it is not possible to identify their hazardous contents because of the absence of technology and proper laboratory facilities. It may be mentioned that aramit sheets are produced from asbestos but it could not be ascertained whether it contains crocedolit. Similarly chemicals imported as transformer oil may contain PCB, but it could not be identified. However, technology and laboratory facilities for identification or the PIC listed chemicals are being developed which will allow the more comprehensive testing of chemicals.

The preparation of a National Chemicals Profile is currently in process, which is an instrumental step towards identifying the problems at hand and any viable solutions. The government is keen to strengthen the capacity for environmentally sound management of chemicals, however improved technical and related support is necessary to develop the capacity to identify hazardous chemicals and take measures for its control.

## **9. WASTE IMPORTS**



Australia exported 165,000 kg of tin waste in 1972. During January 1993, the United States exported 16,500 kg of plastic waste and United Kingdom exported 7,176 kg of tin waste in April 1993 to Bangladesh.

In 1992 the Bangladesh government purchased more than 6000 tons of Zinc Oxy-Sulphate fertilizer from an US company, with funds provided by the Asian Development Bank. The Stroller Chemical Company of South Carolina allegedly mixed 1,000 tons of toxic copper smelting furnace dust into the fertilizer prior to shipping it to Bangladesh. Tests of the fertilizer showed that it contained hazardous levels of lead, which causes neurological problems in children, and cadmium, which causes kidney problems. The Bangladesh government reportedly stopped distribution of the toxic fertilizer after half of it was sold. The remaining 3000 tons is presently under sealed storage and waiting reshipment back to the USA

In 1989 the Bangladesh government examined a proposal to import millions of tons of industrial, municipal, hospital and other institutional waste, as well as other unspecified waste from the USA. A firm proposed burning the wastes near the city of Chittagong. Electricity generated from burning the wastes was to be used to convert saline water into chlorine bleach, hydrochloric acid caustic soda and table salt, however the Bangladesh government finally rejected the proposal.

## 10. TOXIC CHEMICALS

The issues related to toxic chemicals in Bangladesh are as follows:

1. Inadequate information regarding the number and type of industries using toxic chemicals with the Government or private source.
2. Carry out a survey to determine the characteristics and quantities of toxic chemicals.
3. Need for developing a suitable program for oil toxic chemicals.
4. Lack of safety codes for large quantities of chemicals, such as chlorine, ammonia, inflammable petroleum products, technical grade highly poisonous pesticides and solvents used, stored, handled and transported through populated areas.
5. Highly toxic imported chemicals are transported through populated areas without safety codes or emergency preparedness.
6. Lack of emergency response and action plans for the accidental release of toxic chemicals in industrial units.
7. Lack of awareness among the local administration and factory management of such needs.
8. Need to strengthen capabilities of the Department of Environment (DoE) to address the management of toxic chemicals.
9. Lack of laboratory facilities in DoE for monitoring and enforcing control measures.

10. Out of 45 pieces of legislation concerning environmental issues, only 11 are relevant to toxic chemicals.
11. Need for skilled manpower for risk assessment and risk management *for* toxic chemicals
12. Promotion and application of clean technology for industries using toxic chemicals.
13. Land use planning, requirements of safety or buffer zones for industries classified as hazardous to public health or the environment.
14. Overlooks issue of toxic chemicals in the articles of the National Environmental Policy, 1992 on industry.
15. Research and development of indigenous technology for environmental pollution and hazard control generated from toxic chemicals.

### **Policy**

The Environmental Policy of 1992, among others, has called for following measures in order to deal with problems relating to toxic chemicals:

- Control in the use of those agro-chemicals including chemical fertilizers which have adverse effects on the fertility and organic properties of the soil
- Safety measures for workers handling agro-chemicals
- Phase out production import and use of pesticides such DDT, Chlorinated hydrocarbons etc. which are persistent and keep on accumulating in the environment
- Promote the use of natural fibers discouraging synthetic fibers;
- Corrective measures in polluting industries
- Ban the establishment of industries using potentially hazardous waste as raw material (The present import policy has also imposed ban on import of waste)
- Facilitate the environmentally sound disposal and treatment of waste generated within the country through establishing a "Waste Permit/Consent Order" system
- Ensure safety measures of industrial workers exposed to toxic and hazardous waste
- Regulate strictly the discharge of industrial, municipal and other waste into water bodies Protect public health from the adverse impact of all radio-active substances an their wastes
- Promote the use of fossil fuel as an alternative to sulfur and lead
- Control vehicular and industrial emissions
- Control disposal of wastes in the sea
- Generate public awareness
- Undertake necessary R&D activities
- Develop necessary legal framework
- Buildup capacity as appropriate

The Government is well aware of the environmental and health effects of toxic hazardous substances and is committed to environmental protection. The Government is supporting all regional and international initiatives that lead to the reduction of these substances. The government also supports innovations that deal with technology transfer

and research, in an effort to better equip ourselves to combat dangerous substances. Bangladesh is a party to the IRPTC Program and London Guidelines on information exchange of toxic chemicals.

The Government has formed a permanent technical advisory committee for examining the suitability of the use of agrochemicals in Bangladesh. The committee is established by the Pesticide Ordinance, 1985 and the Pesticide Rules. The Ordinance is for ascertaining the safe use of agrochemical, not to import highly toxic and persistent chemicals and to maintain all necessary precautions during formulation, building, storage, transportation and application in field levels to prevent any damage to the environment and ecosystem.

The Department of Environment (DOE) is engaged for assuring the safe use and disposal of toxic chemicals and effluents from different industries. The existing industries in most cases do not have any effluent treatment plants for neutralising the toxicity and harmful effect of their pollutants. Those industries have already been directed to build appropriate waste treatment plants for neutralising the harmful chemicals before disposal into the environment. They have also been directed to maintain all required safety precautions for preventing any damage that may arise out of improper handling or accidents at work.

For new industries to be set up, an EIA has been made mandatory for them to take appropriate procedure at the planning stage, so that development can be safe and sustainable. These activities of DOE are supported by the Environment Conservation Act, 1995 and the Environment Conservation Rules, 1997.

### **Legislation**

The following legal instruments are in place in Bangladesh to address the management of toxic chemicals:

1. The Environment Conservation Act, 1995
2. Environment Conservation Rules, 1997
3. The Pesticide Ordinance, 1971
4. The Pesticide Rules, 1985
5. Notification No. 6/Fertilizer- 21/94/100 dated 17-4-95
6. The Control of Essential Commodities Act, 1956 S.R.O No. 160.Law 195 Fertilizer (Control) Orders, 1995
7. The Dangerous Drugs Act, 1980
8. The Drugs (Control) Ordinance, 1982
9. The Petroleum Act. 1934
10. The Poison Act, 1919
11. The Explosives Act, 1923
12. The Penal Code, 1860
13. The Forts Act, 1908
14. The Chittagong Port Authorities Ordinance, 1976
15. The Coast Guard Act, 1994
16. The Factories Act, 1965

### 17. The Pure Food Ordinance, 1959

The Environment Conservation Act, 1995 and Environment Conservation Rules, 1997 are considered to be important and worthwhile for protecting the environment from degradation. For the first time in Bangladesh, standards have been set for liquid effluents and gaseous emissions with some legal authority and powers given to the Department of Environment. The Environment Conservation Act, 1995 empowers the Director General of the Department of Environment to take all necessary action for conservation of environment and pollution control. Failure to comply with the Environment Conservation Act, 1995 and Environment Conservation Rules, 1997 can result in the imposition of a penalty of a maximum 5 years imprisonment and a maximum fine of \$100,000 Taka. There were legislative regimes for chemical management but these were rather vague both in terms of purpose and punishment. For example, the Smoke Nuisance Act 1905 related to the abatement of nuisance arising from the smoke of furnace and fireplaces in the country with a maximum penalty.

Waste management is a series of processes ranging from the point of collection to final disposal. In the intermediate processes a variety of activities take place, such as the transfer of waste, its reduction in mass and volume, its stabilisation and recycling/re-utilisation. Solid wastes in Bangladesh are generated mainly from agricultural residues, domestic and municipal sources, trading centers, street sweeping, industrial, commercial and construction and farming activities in the country and urban centers.

To promote environmentally sound management of chemicals, Bangladesh has implemented a Pesticide Registration Scheme and has initiated a chemical safety program.

The toxicity and safety of drug items are monitored and controlled by drug administration authority. The government has promulgated drug policy and is trying to assure safety and hygiene at all level. Bangladesh does not have industrial chemical legislation and, as such, it is difficult to control the import of industrial chemicals.

### **Suggested Policy Measures**

The present environment policy requires updating. Government may consider the following issues as relevant to the environmentally sound management of toxic chemicals and hazardous wastes. While doing so, as far as practicable, efforts should be made to facilitate the implementation of Agenda 21 and the Basel convention on the control of Transboundary Movement of Hazardous Wastes and their Disposal.

Emphasis should be had on the elimination of waste at the source to avoid the hassle of subsequent disposal. Volume or weight reduction of the attenuation in hazardous characteristics in production processes is beneficial both for health risk and cost effectiveness in treatment as well as disposal.

Recycling, reuse, recovery and conservation of raw materials are measures that improve the economics of the overall process and allow for the potential marketing of by-products and energy, as compared to treatment and subsequent disposal. Replacement of hazardous chemicals by more easily treatable chemicals or the introduction of technologies that do not require the use of chemicals could be an option to avoid pollution and health risks.

Hazardous liquid wastes should be banned from land filling and pre-treatment required before disposal. Judicious use of pesticides with biological control methods should be given priority of consideration along with the traditional crop rotation practices in integrated pastoral management. A chemical registration scheme may strictly be enforced for controlling import distribution, sale and use of pesticides. Quality control measures through strict specification should also be a part of the scheme to avoid inferior quality. In the workplace exposure to toxic chemicals and hazardous substances and processes should be reduced to avoid or minimise occupational health risks.

Emergency response strategies should be drawn at unit level as well as nationally. Development of a code or guidelines and periodic review of the same for each critical area of activity is a necessity. Adequate legal coverage should be given to the management needs of toxic chemicals and hazardous wastes.

Institutional strengthening, including capacity building, should be prioritised. Inter-agency coordination should be fortified so as to ensure proper monitoring and vigilance of hazardous substances in their use, generation, movement, treatment, disposal etc. for sound management. Emphasis should be given to training, awareness generation and information dissemination

## CHAPTER XI

# SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: FORESTRY

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

**Policy Framework:** National Environment Policy (1992); National Environment Management Action Plan, 1992; Agriculture Policy (1999); country's Ninth Five Year Plan, 1997-2002;

**Key Legislation:** National Forest Policy, 1894; The Forest Act (Act No. XVII) 1927; The National Forest Policy of Pakistan, 1955; The National Forest Policy of Bangladesh, 1979; The National Forest Policy of Bangladesh, 1994; The Bangladesh Wildlife (Preservation) Amendment Order 1973; The Brick Burning (Control) Act 1989; The East Bengal Protection and Conservation of Fish Act, 1950; The Protection and Conservation of Fish (Amendment) Ordinance, 1982; The Protection and Conservation of Fish Rules, 1985.

**Key Institutions:** Ministry of Environment and Forest; The Ministry of Planning; National Environmental Council; Forest Research Institute, Bangladesh; Forest Industries Development Corporation; Institute of Forestry and Environmental Sciences.

### 1. INTRODUCTION

Bangladesh is a country rich in tropical forests. The total forest area is 2.46 million ha which is 16.85% of the landmass of the country, out of which 1.46 million ha forests are managed by Forest Department. The remaining 0.73 million ha is termed as Unclosed State Forest (USF) and is controlled under the Land Ministry and 0.27 million ha are village areas (Homestead).

### 2. SUSTAINABLE USE OF FORESTS

The forests of Bangladesh have been managed with a view to sustainable production of forest resources. Several means were adopted from time to time for the achievement of environmental sustainability. For sustainable use and better management, the forests are divided into circles, Divisions, Ranges and Beats. In each Division forests are managed under a working plan (Forest management plan) with a definite period i.e. from 10-20

years. There are several silvicultural systems practiced according to the nature of forests for sustainability.

The Government's management of hill forests began in the 1870's under a system of selection felling and natural regeneration. Subsequently, in the 1930's a system of clear felling followed by artificial regeneration or plantation appeared, while a system of selection-cum-improvement filling continued. The prescriptions for plantations included a specification to establish a Natural Regeneration Plot (NRP) of six to ten metres width around every 40 ha plantations. During the Second World War, these forests were heavily exploited which continued in an attempt to meet the rising demands of forest products.

In the plain land forests the silvicultural prescriptions included clear felling with regeneration mostly from coppice, simple coppice and coppice with standards on a rotation of about 20 years and the afforestation of banks operated under a taungya system from 1925. None of these practices sustained the forests and they continued to deplete in size and stocking. In the beginning of the 1980's these forests were starting to be managed in accordance with a participatory concept. Thus by establishing agro-forestry and woodlot plantations for sustainable use of forests these attempts have created better results.

The Sundarbans mangrove forests have been effectively managed since 1923 for sustainable use, by adopting a selection system with an exploitable girth limit for the main species and a felling cycle of 40 years. Subsequently, the plans reduced the felling cycle to 20 years.

By 1894 the National Forest Policy was promulgated and this provided the foundation for all future Acts and Rules which to this day are used to underpin the administration of the Sundarbans. The principal policy directives and legislation, which affects the integrated forest management of Sundarbans are:

- The Forest Act (Act No. XVII, 1927)
- The National Forest Policy of Pakistan, 1955
- The National Forest Policy of Bangladesh, 1979
- The National Forest Policy of Bangladesh, 1994
- The Bangladesh Wildlife (Preservation) Amendment Order, 1973
- The Brick Burning (Control) Act, 1989
- The East Bengal Protection and Conservation of Fish Act, 1950
- The Protection and Conservation of Fish (Amendment) Ordinance, 1982
- The Protection and Conservation of Fish Rules, 1985

### **3. FOREST CONSERVATION**

#### **Hill Forests**

Forest Conservation in Bangladesh started about 130 years ago in the hill forests with the declaration of 5670 square miles Government Forest in the Chittagong Hill Tracts under section 2, Act VII of 1865 published in Calcutta Gazette in 1st February 1871. The second step of the hill forests conservation strategy was to declare forestlands as reserved forests. Sitaparhar of Rangamati district (Chittagong Hill tract) was the first to be declared a reserve forest in 1975. Subsequently, in an attempt to increase the conservation of forests, many forests were declared as reserved forests. 12644 sq. kilometres of forest lands were declared as reserved forests up until 1987 in Bangladesh and the process of reserving is continuing to this day. In the context of attempts to conserve forest areas several measures were taken to conserve forest and forest resources in Bangladesh, important of which is Forest Reservation, raising of plantations etc. These are described bellow.

### **Mangrove Forests**

Tidal forests of Bangladesh include the Sundarbans, Chakoria Sundarbans and mangrove plantations. The Sundarbans is the primary component of the coastal zone in the Bay of Bengal of Bangladesh. The British Government assumed the proprietary right over the Sundarbans forests under Regulation III of 1828. Conservation initially commenced with the declaration of forest areas in Bagerhat and Khulna districts in 1875 and Satkhira district in 1876 under Act VII of 1855. In 1879 the forests, so reserved, were declared again as reserved forests under the Forest Act of 1878 and Chakoria Sundarbans were declared reserved forest in 1903. For mangrove plantations in the coastal zones of Bay of Bengal about 12,30,000 acre of newly accreted char lands were declared reserved forests under section 4 of the forest Act, 1927 in 1977.

### **Plain Land Sal Forest**

Plain Land Sal Forests were managed privately by the feudal Land Lord or Zamindars before 1925. Conservation of these forests started with the creation of Dhaka-Mymensingh Forest Division in 1925 and many of the Plain Land sal forests like Bhawel ghar, Atia forests were handed over to the Forest Department for scientific management. The Forest Department managed these forests by declaring them as reserved forests. Though some forests were handed over to the Forest Department most of these were nationalised in 1950 under the State Acquisition and Tenancy Act. These forests are no longer under process of reservation under the Forest Act 1927.

Plantations as a means of conserving Natural Forests for conservation started in the hills forests of Bangladesh in 1872. Plantations are raised in clear cutting areas, bare lands, scrublands and other degraded forest lands.

Legally the Plain Land Sal Forests were two types of vested forests belonging to private owners and acquired forests. Privately owned forests were acquired by Government under State Acquisition and Tenancy Act of 1950. Later on, these forests were declared Reserved Forest under section 4 of the Forest Act, 1927. Alternatively some forests were declared as Reserved Forests under Section 20 of Forest Act, 1927.



Most of the Plain Land Sal Forests form slightly elevated tracts with a maximum height of 60' from the surrounding plains. The flat ridges running north to south form an irregular mass of high lands with gentle slopes. These high lands are locally known as "Chala lands". These Chala lands are intercepted by numerous depressions in the form of long and narrow valleys and are locally known as "Baid lands". Alternatively, some forests are irregular masses of broken hills along the foot hills of Garo Hills. The hills are of irregular heights with a maximum of 500' from the plain level. These forests are very seldom contiguous and are generally intermixed with cultivation and habitations of local tribal people who are mostly Garos, Koch, Mandais and Hajongs. The ridges are running north to south and the flat valleys suggest a gentle southward slope. The mean annual temperature is 77°F with maximum 100.5°F and minimum 39°F. There is no occurrence of frost. The annual rainfall varies from 50" to 100".

The entire forest tract was under the management of Zaminders, who did not manage the forest scientifically. The promulgation of the Bengal Private Forest Act 1945 was the first step to bringing the private woodland under the Government authority for scientific management. In response the Zaminder started felling trees ruthlessly to earn maximum money before the forests were taken over by Government. The partition of British India in 1947 has accelerated the tempo of felling due to migration of Hindu Zaminders to India. As a result the forest was depleted beyond description.

The first clear felling was made during 1953-54 before the initiation of any regular working scheme. Following the felling the area was regenerated artificially, predominantly with Sal. Experiments were also carried out to find out the suitability of the area for growing Tendu and bamboo. The result of such experiments is reported to be encouraging. A large-scale afforestation program was implemented under various development schemes, utilising both Sal and Tendu. Subsequently, afforestation of areas with Tendu was abandoned and Tendu plantations were burnt as per instruction from Government as an anti-smuggling measure.

### **Village Forests**

Village Forests in Bangladesh are a very important storehouse of forest produce, especially for timber, fuel wood, and bamboo, which may be necessary to fulfil rural household demands throughout the country. Village forests include trees growing mostly on homestead land around dwelling houses in the villages, farms, marginal lands and wastelands. The tree coverage in village forests constitutes 0.27 million ha and is likely to increase in areas as the population grows and natural forests continues disappear. At least 149 species of natives and exotic trees have been identified in the village forests.

### **Logging**

Timber is collected from the forests by a coupe marking method. At first, the coupe area is identified and demarcated and then the standing trees are marked species wise and the standing volume of timber and firewood is calculated.

After coupe marking the timber and firewood are disposed of in two ways -

- (i) By departmental collection and then sale by auction, sealed tender or permits.
- (ii) By auction or by seal tender, rate fixed by competition under conditions contained in sale notices approved of by the conservator.

Logging operation is done in two ways -

- (i) Manual or traditional logging
- (ii) Mechanical logging.

In Bangladesh traditional logging is most common where axes and saws are generally used. Bangladesh Forest Industries Development Corporation (BFIDC) uses a mechanical logging method for the collection of timber, in addition to manual logging. Once the trees are felled and logged, the logs are measured, marked and recorded on the spot by local forest staff. The timbers are then loaded in trucks or boats in accessible areas or are shoulder borne to the nearest road or river and loaded in trucks or boats and headed for depots or markets.

The annual outturn of timber and fuel wood from the national forest are given below:

Year	Timber (cu m)	Firewood (cu m)
1984 – 85	493.42	888.31
1985 – 86	560.71	989.81
1986 – 87	361.48	670.11

Source: Statistical Yearbook of Bangladesh, 1991.

In Bangladesh all forms of tree felling activities from natural forests have been stopped up to the year 2000 in order to preserve biodiversity of the country under G.O. No. Sha - 2/MOEF-192/90/580 dated 11.9.90. This ban remains in force.

### **Forest Land Conversion**

Bangladesh is one of the most densely populated countries in the world. The per capita forest rate is 0.02 ha, which is extremely low. Previously about 40% of the country was covered with forests but due to population increases many forestlands were converted into homesteads and agricultural lands.

The world largest Sundarban mangrove forests were once double their present size (6017 sq.) Zaminders on the northern boundaries were allowed to reclaim as much of the forests bordering on their land as they could. The British Government assumes the proprietary right to the forests in the Sundarbans under regulation III. Large leases were granted to capitalists, including Europeans, for the clearing of forests into agricultural land for cultivation under this regulation. This large-scale destruction of forests continued for more than four decades before the Government realised the adverse effects of conversion of forests and the bundling up of land. Leasing for conversion of forestland into agriculture in the Sundarbans was stopped in 1875. The Sundarbans is now free from encroachment, habitation and agriculture.

Before 1925 the owner of the plain land Sal forests were the local Zaminders or feudal landlords. Thus many forestlands were coveted for agricultural purposes, homesteads, markets and school lands. These forest areas were not reserves or put under forest management except few for long periods since nationalization of the country in the 1950s. In contemporary times many plain land Sal forests are encroached upon illegally and converted for agriculture, homestead and commercial purposes. The Forest Department has the responsibility and is empowered to attempt recovery of the encroached lands. Participatory agroforestry and woodlot plantations are now growing in the recovered forest areas.

In the hill forests illicit jhumming or shifting cultivation is a great problem for forest management. Although shifting cultivation has been prohibited in the forests reserves for over 90 years, the effect of jhumming is still evident. Apart from destruction of vegetation and its effect on forest regeneration, jhumming exposes the ground to erosion with the resultant loss of soil and the silting up of the navigable rivers. Vast areas of unclassed forestland is subjected to shifting cultivation and encroachment with the formation of a large hydaral lake at Kaptai and the subsequent displacement of the tribal population from the rich-fertile reverine land. In the recent past the problem of encroachment inside the reserve forest has started taking an alarming turn. In some places tribal villages have been established right inside the reserve forests. This matter is now in the hands of the administrative authorities and the eviction of the unauthorised encroachers is now under way. Many forest villages were established by the Forest Department within the reserve or protected forests in Chittagong and Cox's Bazar hill forests for the purpose of increasing labour for raising plantations. As a result, many forest lands were converted into homestead and agricultural land. The new recruitment of forest labourers has been stopped since independence.

### **Non-Timber forest products**

Non-timber forest products is a terms for *all produce*, including all goods of biological origins as well as services derived from forest or land under similar use and excluding wood in *all its* forms.

The increase in emphases on non-timber forest products has accelerated in recent years. This is firstly because of high social and commercial values and secondly due to the growth in interest in these products, which has seen a corresponding increase in the demands placed upon the Forest Department for day-to-day management. Due to population pressure and the over exploitation of forest areas in Bangladesh, there has also greater utility of non-timber forest products.

### **Forest Fires**

Hill forests fires are an infrequent occurrence and usually of small extent in the high forests of Chittagong and Cox's Bazar and are not generally a very serious problem. However, in young plantations fire is a serious problem and plantations should be protected by cutting clear fire lines.

The natural forests of Chittagong Hill Tracts are principally evergreen and do not suffer much from fire. However, ground fires sometimes spread into the edges of reserve from jhumming in adjacent unclassed State forests, which destroys the regeneration. Fire is also a hazard in the pure bamboo stands when the bamboo has flowered and died. Fire is a constant danger to the plantations, which are much more inflammable than kamafuli paper mills. Plantations exist largely for purposes of extraction of bamboo by the Forest Department Corporation and the extraction of timber by a large labour force that resides in the forest regions. The presence of the labour force in the forest, especially in the drier months, has been found to be one of the major causes of fire occurrence in the forests.

Fires are frequent in the Sylhet Forest, especially during December to March. Sometimes these fires continue to burn for days, which causes heavy damage to the tree growth and bamboo. These fires normally originate from the adjoining private forest and unclassed State forests. The extinguishment of these fires is extremely difficult due to the hilly nature of the area.

The following methods are generally adopted to control fire in the hill forest:

- 1) By fire lines: Every year, fire lines are cut and kept clean.
- 2) By fire watching arrangements: Every year during the dry season a special firewatcher is engaged to watch and protect fire.

There are two fire protection rules in the hill forests. These are-

- 1) The Sylhet Forests (Protection from Fire) Rules, 1954.
- 2) The Chittagong and Chittagong Hill Tract Reserved Forests Fire Protection Rules, 1954

#### **4. POLICY AND LEGISLATION**

##### **Policy**

Forest policy has been implemented as a means of conservation. The first forest policy was produced in 1894 vide circular No 22.F. dated 19<sup>th</sup> October 1894. According to the policy, to constitute and preserve forests, the title rights and privileges of the users of the forest area have to be restricted and regulated. The uses of forestlands are for preservation of physical and climatic conditions. The Forest Policy, 1894 was reoriented in 1955 and 1962.

The National Forest Policy of Bangladesh was first formulated in 1979. The National Forest Policy of 1979 was revised and a new National Forest Policy 1994 was adopted in the light of demand of the time and overall prevailing conditions in the Forestry Sector. The Forest Policy, 1994 gave emphasis on forest conservation and scientific management of the forests for economic development and the maintenance of ecological balance in the country. The Forest Policy proposes to increase the forest cover of Bangladesh from the current level of 1 percent to 20 percent by the year 2015; 10 percent of reserved forest is to be brought under

protected areas; and provide protection for natural forest areas while encouraging investment in afforestation and agroforestry.

A national conservation strategy was initiated in 1986 upon the realisation that sustainable development depends on conservation and management of natural resources and their supporting ecosystem.

### Legislation

For conservation and protection of forests and forest resources several forest Acts were introduced, which are as follows:

Year	Short Title	Remarks
1865	The Act 1865	Repealed
1878	The Indian Forest Act 1878	Do
1890	The Forest Act 1890	Do
1891	The Amending Act 1891	Do
1901	The Indian Forest (Amendment) Act 1901	Do
1911	The Indian Forest (Amendment) Act 1911	Do
1914	The Repealing and Amendment) Act 1914	Do
1918	The Indian Forest (Amendment) Act 1918	Do
1920	The Eroluliam Act 1920	Do
1927	The Indian Forest Act 1927	Modified
1949	The Forest (Amendment) Act 1990	Do

For wildlife conservation and protection the following acts were introduced.

Year	Short Title	Extent
1879	Elephant Preservation Act 1879	The whole
1912	Wild Birds and Animals Protection Act 1912	Do

The Forest Act 1927 and the Bangladesh Wildlife (Preservation) (Amendment) Act 1974 are two Acts, which provide legal protection of wild flora and fauna respectively. This legislative network is also made up of the Private Forest Ordinance 1959 and the Asia Forest (Protection) Ordinance, 1982. The Brick Burning (Control) Act 1989 came into force to ban firewood from fueling the process of brick burning. The Brick Burning (Control) Act 1989 was amended in 1992 and Brick Burning (Control) (Amendment) Ordinance came into force in 1992 as a strict measure of conservation of forest resources. The Forest Transit Rules, framed under the provision of the Forest Act 1927 are in force to control movement of forest produces from both public and private forest lands. Protection against loss and damage of forest resources is handled through effective patrol with arms and by applying the Act of 1927. For effective patrol and strong communication the Forest Department introduced a wireless and Waki-Taki system.

There are many measures in place with ideals of the conservation of forests, forest resources, wildlife, and the environment and the maintenance of the ecological balance

as a primary focus. The Forest Department has been responsible for maintaining national parks, game reserves, wildlife sanctuaries, bird sanctuaries and world heritage.

The main provisions of these Rules are as follows:

### **Sylhet Fire Protection Rules**

- 1) These rules come into force during the period from the first day of November in one year to the first day of June in the next year.
- 2) A person intending to clear by fire any standing forest or grassland near a Government forest shall follow the following directions -
  - i) He shall give at least one weeks notice to the nearest Forest officer of his intention to do so;
  - ii) He shall clear a belt of land at least 20 feet wide nearest to the government forest.
  - iii) He shall not choose a day or time for such burning when high wind is blowing.
  - iv) He shall light the fire in a direction contrary to the prevailing wind.
- 3) A person desirous of burning, on land adjoining a Government forest, wood, grass or weeds, or other out materials, shall collect the materials into heaps, and burn it separately in such a way that the fire will not endanger the Government Forest.
- 4) A person collecting inflammable forest produce, such as grass, bamboos etc., on land adjoining a Government forest, and a holder of a permit to collect such material from a Government forest, shall stack the material so collected in an open space, as far removed as possible from such forest.
- 5) Persons traveling on roads passing through or along the boundary of a Government forest shall not camp at any place other than a ground cleared and set apart for the purpose of camping by the Forest Officer, who shall publish every year a list of such grounds in the vicinity of a Government forest. Persons so camping shall light fires they may require for cooking or other purposes in such a way as not to endanger the Government forest or the building or property on the camping grounds and shall extinguish all such fires before leaving the camping ground.
- 6) No person shall carry burning wood, firebrands, torches, smouldering material or a naked flame in any form, through or along a Government forest.

### **National Parks and Sanctuaries/ Protected Areas and wetlands:**

The Protected Areas of Bangladesh include National Parks, Wildlife Sanctuaries and Game Reserves. Madhopur National Park is the first National Park as well as protected area of Bangladesh, which was established in 1962.

The government has so far declared seven Wildlife Sanctuaries, four National Parks and one Game Reserve in the forest areas through notification in the official gazette. In addition, there are two wildlife sanctuaries in the forest areas and these two

protected areas have not yet been notified under the above Wildlife Order. Thus, at present, there are 14 Protected Areas in the forests of Bangladesh.

## **5. RECREATION AND TOURISM**

The Sundarbans is famous for recreation and tourism in Bangladesh, particularly for its special vegetation, location, configuration, environment and nature, wildlife, fishing etc.

Winter season is more suitable and preferable for tourism. One can visit the Sundarbans by launches, trawlers, speedboats etc. There is no mud, metallic or air road in the Sundarbans except a water path. There are some organisations in Dhaka, Khulna and Mongla who conduct package tours in the Sundarbans.

Non-allowable activities during a visit to the Sundarbans are:

- Carrying of Guns, Hunting, Shooting, felling, removal of trees are not allowed.
- If a gun is found action will be taken according to the Bangladesh Wildlife (Preservation) (Amendment) Act 1974.

A desire to establish tourism in Bangladesh has been demonstrated for many years, which has been put into operation by a first Master Plan for the period 1965 to 1985 and a second strategic Master Plan ii 1985 for the ten years to 1995. Following the latter, a National Tourism Policy was formulated in 1992. Bangladesh is a founder member of The World Tourism Organization (WTO) established in 1975: The National Tourism Policy, 1992 proposed that, because of its unique and diverse attractions of international renown, the Sundarbans reserve Forest should be developed as the springboard for the tourism industry for the country as a whole. Ecotourism is very much suitable and preferable in the Sundarbans. Wildlife viewing is one of the several attractions.

## CHAPTER XII

### SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: BIODIVERSITY

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**Key Issues:** Loss of Biodiversity; Depletion of Forest; Poaching; Illegal tree Felling; Protection of endangered Species; Education and awareness; Capacity Building; Enforcement and Compliance; Ecosystem Development; Public Participation;

**Policy Framework:** Fourth and Fifth Five-Year Plan, 1990-2002; National Environment Policy, 1992; National Environment Management Action Plan, 1992;

**Laws and Regulation:** General Law for Conservation of Fauna and Flora Wildlife (Preservation) Act 1974; Conservation and Protection of Fisheries Act 1950 amended 1982; Laws and Regulation on the Conservation of Species; Laws and Regulation on Hunting; Laws and Regulation on Protected Area;

**Institutions:** Ministry of Environment and Forests;

#### 1. INTRODUCTION

Bangladesh is a land of extreme diverse biodiversity. About 5000 flowering plant species are found in Bangladesh. The natural forests such as hill forests, Sundarbans mangrove forests and plain land Sal forests are the storehouse of biodiversity both for plants and animals. The plant community found in hill forests greatly differ from Sal forests and the Sundarbans mangrove forests and vice versa.

About 40 threatened plants have been identified in Bangladesh. The reasons for extinction or rare or threatened plants species are:

- Population pressure;
- Forests converted into agriculture lands;
- Over exploitation; and
- Poor management.

The Sundarbans mangrove ecosystem, the largest remaining areas of mangrove in the world, supports an exceptional biodiversity. The Royal Bengal Tiger, Estuarine Crocodiles, Spotted Deer and are innumerable varieties of wildlife enrich the biodiversity of the Sundarbans. About 330 spp. of plants, 400 spp. of fishes, over 270 spp. of birds. 35spp. of reptiles and 42 spp. of mammals are recorded. Four large mammal species became extinct from the Sundarbans since the beginning of the century



and now some species are rare, some are endangered and some are threatened. The name of the extinct mammals are Javan rhinoceros (*Rhinoceros sondaicus*), Wild buffalo (*Bubalus bubalis*), swamp deer (*Cervus duvauceli*) and hog deer (*Axis porcinus*). This exemplifies the urgent need for conservation of biodiversity in the Sundarbans.

There are 840 spp. of wildlife found in Bangladesh, out of which 19 species are Amphibian, 124 are Reptiles, 578 are birds and 119 are mammals. 17 species wildlife have become extinct; 19 species are rare and 32 are endangered in Bangladesh.

There are several reasons for the extinction, rarity and endangerment of wildlife such as:

- Depletion of habitat due to population pressure and industrialisation
- Shortage of food
- Hunting
- Environmental pollution.

For the protection and conservation of Biodiversity, the Sundarbans (139,000 ha) was declared the World Heritage Site in 1996. National parks, Wildlife, Sanctuaries, Game Reserves and Botanical Gardens have established in the different parts of Bangladesh.

The Forest policy 1994 emphasises the following for biodiversity conservation.

- i) All state owned forests of natural origin and the plantation of Hills and Sal forests will be used for producing forest resources, keeping aside the areas earmarked for conserving soil and water resources and maintaining the biodiversity.
- ii) Inaccessible areas such as slopes of the hills, fragile watersheds, swamps, etc. will be identified and kept as protected areas.
- iii) The priority protection areas are the habitats, which encompass representative samples of flora and fauna in the core area of National Parks, Wildlife Sanctuary and Game Reserve. Attempt will be taken to increase the amount of this protected area by 10 percent of the reserved forestland by the year 2015.

## 2. WILDLIFE PROTECTION

Bangladesh has a variety of wildlife but some of them have been extinct and others are endangered. The Asian Elephant and Tiger are examples of such endangered species. The International Union for Conservation of Nature (IUCN) is promoting more than 10 projects for wildlife and habitats protection.

## 3. WETLANDS

There are many wetlands in the Ganges-Brahmaputra-Meghna river basin, where 22 sites of typical wetland have so far been identified. The Sundarban wetlands, located in the southwest coastal area, is important and has been assigned to be the Ramsar site. The diverse variety of species in the wetlands is quite rich, as shown in the table below. The protection of mangrove forest in Sundarban is promoted by IUCN. Additional species in the wetlands as of 1994 includes numerous species of Water Fowl (125) Freshwater fish (260) Mangrove (17) Reeds (5) and Aquatic food/medicinal plants (30).

#### 4. LAWS AND REGULATION

Following laws and regulations are being applied in the protection and conservation of biodiversity in Bangladesh:

- General Law for Conservation of Fauna and Flora Wildlife (Preservation) Act 1974
- Conservation and Protection of Fisheries Act 1950 amended 1982
- Laws and Regulation on the Conservation of Species
- Laws and Regulation on Hunting
- Laws and Regulation on Protected Area

In light of this legislative network Bangladesh has completed the first phase of a national conservation strategy aimed at integrating conservation goals with national development objectives and overcoming identified obstacles to sustainable development. Some twenty sectors in the current Third Five-Year Plan are identified for critical analysis during a second phase, including the conservation of genetic resources, and wildlife management and protected areas. The Bangladesh Agricultural Research Council, Ministry of Agriculture is the lead agency for the implementation of Phase II, which began in October 1989.

There is no national wildlife conservation policy. The Bangladesh Wildlife (Preservation) Order, 1973, promulgated under Presidential Order No. 23 on 27 March 1973 and subsequently enacted and amended in two phases as the Bangladesh Wildlife (Preservation) (Amendment) Act, 1974, provides for the establishment of national parks, wildlife sanctuaries, game reserves and private game reserves (see Annex). Under Article 23, wildlife sanctuaries enjoy a greater degree of protection than national parks. For example, entry or residence, introduction of exotic or domestic species of animals and lighting of fires is prohibited in wildlife sanctuaries, but not national parks. No specific rules are detailed for game reserves. The Article makes provision, however, for the government to relax any of these prohibitions for scientific, aesthetic or other exceptional reasons, and to alter the boundaries of protected areas. Under Article 24, provision is made for the establishment of private game reserves upon application by the landowner. The owner of a private game reserve may exercise all the powers of an officer provided under the Act. Proposals are being drawn up to strengthen the existing legislation, largely through raising fines and terms of imprisonment for offences.

Conservation, use and exploitation of marine resources are provided for under the Territorial Water and Maritime Zones Act, 1974. According to provisions in this Act, conservation zones may be established to protect marine resources from indiscriminate exploitation, depletion or destruction. At present, there is no legal provision for the management of coastal zones.

The Forest Act, 1927, enables the government to declare any forest or wasteland to be reserved forest or protected forest. Activities are generally prohibited in reserved forests; certain activities, such as removal of forest produce, may be permitted under license in protected forests, while others, such as quarrying of stone and clearing for cultivation, may be prohibited. The government retains rights to designate that any land constituted as reserved forest may be assigned to village communities, with conditions for their management prescribed by government. Such forests are called village forests. Under the Forest (Amendment) Ordinance, 1989, penalties for offences committed within reserved and protected forests have been increased from a maximum of six months imprisonment and a fine of Tk 500 to five years imprisonment and a Tk 5,000 (US\$ 1,700) fine. In accordance with the National Forest Policy, adopted in 1979, effective measures will be taken to conserve the natural environment and wildlife resources. The Policy does not, however, deal explicitly with the need to set aside special areas as protected forests, as distinct from productive forests, to preserve genetic diversity and maintain ecological processes within the context of sustainable development.

## CHAPTER XIII

### SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: WILDLIFE

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

**Policy Framework:** The National Forest Policy, 1994; National Fish Policy, 1998; The Bangladesh Environment Policy, 1995; Wetland Policy for Bangladesh; National Environment Action Plan, 1992; Country's Ninth Five Year Plan (1997-2002);

**Key Legislation:** Environment Conservation Act 1997 Penal Code, 1860; Fish Conservation Act, 1950; Bangladesh Wildlife (Preservation) Act, 1973; Wildlife (Preservation) Order, 1974; The Bengal Rhinoceros Preservation Act, 1932; The Wild Birds and Animals Protection Act, 1912; The Elephant Preservation Act, 1997; The Forest Act, 1927; Environment Act, 1995; Fish Act, 1950; Crab Exports Rule, 1998; East Bengal Protection and Conservation of Fish Act, 1950; Bengal Cruelty to Animals Act, 1920

**Key Institutions:** Ministry of Environment and Forest; The Ministry of Planning; National Environmental Council; Department of Forests; International Institutes of Environment; Forest Research Institute, Bangladesh; Forest Industries Development Corporation; Institute of Forestry and Environmental Sciences

#### 1. POLICY

There is no separate wildlife policy. The National Forest Policy, 1994 contains policy principles of wildlife preservation.

#### 2. INSTITUTIONAL STRUCTURE

The Chief Conservator of Forests (CCF) is the implementing and policy recommendation authority. The territorial Divisional Forest Officers (DFO) is responsible for protection of wildlife in their respective jurisdictions under the Wildlife Order. The DFO's are also responsible for implementation of development projects on wildlife conservation. Dhaka is the Headquarter of Forest Department and the DFO's offices are in the district headquarters. The DFO's do enforce the wildlife laws and implement the development

projects through the Range and Beat offices. Prior to the promulgation of the Bangladesh Wildlife (Preservation) Order, 1973 in 1973, the following Acts were in force in Bangladesh for preservation/conservation of wildlife: -

1. The Bengal Rhinoceros Preservation Act, 1932
2. The Wild Birds and Animals Protection Act, 1912
3. The Elephant Preservation Act, 1997

At the time of promulgation of Wildlife Order, the above Acts were repealed in whole. Wildlife conservation activities are of two kinds in the country. Firstly, those to enforce wildlife legislation and rules made there under and secondly, to develop programs and projects. So far three development projects have been implemented in the country on wildlife preservation and conservation. These projects had components on tiger, elephant, crocodile and other threatened species. Despite these initiatives there are no separate projects on tiger or elephant in the country due largely to the:

- a) Lack of proper institution and trained manpower for preservation of wildlife;
- b) Continued increase of local demand for wildlife (Poaching, Hunting, Killing and Trapping) and habitats of wildlife;
- c) Lack of information for planning and management; and
- d) Continued degradation of habitats.

### **3. LEGISLATION & REGULATIONS FOR EIA, PERMITTING AND LICENCING, STANDARDS, ETC**

The Wildlife Order is the exclusive legislation for preservation and conservation of wildlife in the country. It entered into force immediately after its promulgation in 1973. It is applicable to wild mammals, birds, reptiles and amphibians and also for parts and derivatives of wildlife. The Order also deals with the conservation and preservation of Wildlife Sanctuaries, National Parks and Game Reserves (Protected Areas). It has provisions for establishment of Protected Areas.

There is no provision for EIA. However, the Wildlife Order contains provisions for permitting and licensing for shooting and trapping, and also for trade on wildlife {Article 12 & 13}. Article 47 of the Wildlife Order contains provisions for making rules.

There are three Schedules in the Wildlife Order: Species listed in Part 1 of the First Schedule can be hunted unless otherwise prohibited by gazette notification under the provisions of the same order (Article 46); the Second Schedule contains provisions for lawful possession of wildlife and parts and derivatives thereof; and species listed in the Third Schedule are protected.

Part 1 of the First Schedule has provision for declaration of rogue elephants, man-eating tigers, and also for population increase of wildlife, which threatens public life and property and thereafter allows them to be killed or killing or trapped.

#### **4. COMPLIANCE AND ENFORCEMENT INCLUDING MARKET BASED INSTRUMENT INCENTIVES**

Compliance with the provisions and rules made under the Wildlife Order and enforcement of the same in the country are very difficult tasks due to lack of required trained and dedicated wildlife staff and also due to lack of awareness among people on the importance of conservation of wildlife.

##### **Prevention and Settlement of Disputes**

Provisions for prevention have been included in the Wildlife Order (Article 6 & 23), and Article 36 contains provisions for dealing with the commission of offences departmentally by the authorised officers. The government may delegate powers to the subordinates through gazette notifications (Article 33 and 44).

##### **Judiciary Interventions and Decided Court Cases**

Wildlife offences are tried in the courts of Magistrates (Article 34). There are provisions for trying offences summarily by the District Magistrates (Article 35). There are also provisions for trying offences in the Mobile Courts (Article 30). Court cases are punishable with imprisonment and fines.

#### **5. EMERGING ISSUES AND TRENDS INCLUDING POSSIBLE AREAS OF FURTHER REGULATIONS (EMERGING ISSUES)**

1. Increase of catching/killing of wildlife for various purposes (the main two purpose for illegal trade and for domestic consumption due to poverty).
2. Degradation of habitats.
3. Legal provisions for preservation of wildlife habitats at a short distance in all kinds of ecosystems including the rural areas throughout the country.

#### **6. HABITATS**

Forests, homestead jungles and wetlands especially haors, bils, boars, rivers and estuaries are the main habitats in Bangladesh. All big mammals are now only found in the forest area (except dolphins). The main forest areas of Bangladesh are Sundarbans Mangrove forests, tropical forests of Chittagong Hill Tracts, Chittagong, Cox's Bazar and Sylhet. At present Madhupur (*Shorea sp*) forests provide habitats for monkeys and langurs.

##### **Issues**

1. Loss of pristine characters of habitats (degradation).
2. Decrease of habitats including fragmentation.
3. Continued decrease of population size of wildlife.

4. Decrease (change) of species, diversity in habitats.

### **Policy**

1. The National Forest Policy, 1994.
2. The Bangladesh Environment Policy, 1995
3. National Fish Policy, 1998.
4. A Wetland Policy for Bangladesh has been drafted.

The National Forest Policy, 1994 is followed for preservation and conservation as well as improvement of forest habitats including the plantations on the road, embankments and on other marginal lands.

### **Institutional Structure**

The Forest Department is responsible for management and it has in place a network/infrastructure throughout the country.

### **Legislation and Regulations**

1. *The Bangladesh Wildlife (Preservation) Order, 1973* - The Wildlife Order contains provisions (Article 23) for declaration of wildlife sanctuary, National Park and Game Reserve.
2. *The Forest Act, 1927* - This Act has provisions for felling, and carrying of trees as well as grazing and trespassing of cattle and cultivation in and around notified and reserved forests.
3. *The Bangladesh Environment Conservation Act, 1995* - This Act contains provisions for declaration of "Ecologically Critical Area" (ECA)
4. *The East Bengal State Acquisition and Tenancy Act, 1950* - This Act contains provisions for management of government (Khas) land especially rivers, bils, baors, haors, lakes etc.
5. *The East Bengal Protection and Conservation of Fish Act, 1950* - This Act contains provisions for declaration of fish sanctuary in the rivers, bils, baors etc. for the conservation of fishes.

The entrance, residing, grazing of cattle etc., without prior permission, is prohibited in the Protected Areas (Wildlife Sanctuaries, National Parks, Game Reserves) under Article 23 of the Wildlife Order. Offences under the Wildlife Order could be compounded departmentally under Article 36.

Article 23 of the Wildlife Order has provisions for declaration of Protected Areas. The Forest Act, 1927 has provisions for declaration or Reserved Forest. There are provisions for judiciary interventions under the Land Acquisition Act.

### **Emerging Issues**

1. Urbanisation, industrialisation, road construction etc.
2. Unscientific harvests of natural resources from wetlands and forests.
3. Introduction of exotic species. There must be strict regulations on these issues.

4. Some undesirable species (mosquito, rats, eucalyptus) are increasing in the habitats, which may be harmful for the health of wildlife as well as that of human beings.

## 7. POACHING

Wildlife hunting, trapping and killing without permission under the Wildlife Order are punishable offences {Article 26 (b)}. In Article 6, prohibitive measures of wildlife hunting, shooting, killing etc. have been included.

### Issues

1. Threat in the hill forests.
2. Commercial and organised poaching in the Sundarbans.
3. Increase of poaching (netting/trapping of waterfowls) for local business by the poor.

### Policy

There is no policy for regulating poaching.

### Institutional Structure

The Forest Department has field offices in all forest areas. The Forest Offices have field staff up to the rank of Foresters (Beat Offices) and they are empowered to deal with poaching (Article 31). The Bangladesh Police also has offices all over the country. All Police Officers up to the rank of Sub-Inspector are empowered to discharge functions under Article 16,17 ,18 and 31 ( 1) of the Wildlife Order. The above Articles of the Wildlife Order deal with the offences of killing, trapping or shooting or hunting of wildlife without permission.

### Legislations and Regulations

Article 6, 16, 17 & 18 contain provisions in respect of poaching, and Article 31 deals with the power (delegation of authority) of arresting the offenders.

### Compliance and Enforcement

Within the jurisdiction of forest areas, poaching is not significant. However, poaching of deer is quite often reported in Sundarbans. Shooting of birds without permission, especially waterfowls, during winter in the wetlands are commonly reported. The netting of waterfowls, particularly ducks and waders for selling in the towns and cities for commercial purposes also frequently occurs. All of these are acts of poaching and are illegal. Officials and staff of the Forest Department, the Bangladesh Police, Customs and Bangladesh Rifles are very much aware of the Wildlife Order. Thus it is clear that such a widespread awareness that these activities are illegal demonstrates that the Wildlife Order is under effective implementation.



### **Prevention and Settlement of Disputes**

The Wildlife Order has specific provisions (Article-37) for taking permission from the forest offices if any persons are in possession of arms with licenses issued under the Arms Act, 1876 and residing within 5 miles from the radius of a Wildlife Sanctuary, National Park or a Game Reserve. Under Article 36, any offences including poaching can be compounded departmentally (Compound Offence Report) if the offender agrees to do so. A First Class Magistrate is empowered to try any offences under the Wildlife Order, and the District Magistrate or any Magistrate of the First Class is empowered to try any offences summarily (Article-35). There are provisions to try offences by setting up Mobile Court (Article-30). Article 33, contains provision to prevent commission of offence.

### **Emerging Issues**

1. Poaching of wildlife for commercial purposes especially in Sundarbans, and the poaching of wildlife in the forest of Chittagong, Cox's Bazar, Chittagong Hill Tracts and also in the Tea Gardens by high officials and elites.
2. Increase of poaching (birds, hares and other small mammals by some of the ethnic groups) for domestic consumption and for the livelihoods of the poor.
3. There should have been legal provisions for "Safari" shooting and captive breeding of wildlife in the country for minimisation of poaching.

## **8. PROTECTED AREAS**

Wildlife Sanctuaries, National Parks, Game Reserves and Private Game Reserves are defined respectively in Article 2(p), h), (c) and in Article 24 are called Protected Areas for wildlife conservation under the Wildlife Order. Provision for the declaration and management of Protected Areas has been made in Article 23 and 24.

### **Issues**

1. Separate Management Plans are not yet placed for implementation of Protected Areas.
2. Appropriate officials and staff for management of Protected Areas are not available.
3. Revenue budget for management of Protected Areas are not available.
4. Lack of commitment for management of Protected Areas as separate entity/unit.

### **Policy**

There is no separate policy for management or for the creation of Protected Areas in Bangladesh.

### **Institutional Structure**

Local Forest Officers are responsible for the management of Protected Areas. They are Divisional Forest Officers, Range Forest Officers and Beat officers. In the Protected Areas of Sundarbans separate infrastructures have been installed. These infrastructures, as well as Assistant Conservator of Forests and other field staff of the Protected Areas in Sundarbans, are under the control of Sundarbans Environmental Forest Division. The

DFO of this Division is exclusively responsible for the management and protection of the Protected Areas in Sundarbans.

### **Legislation and Regulations**

1. The Bangladesh Wildlife (Preservation) Order, 1973.
2. The Forest Act, 1973.

### **Compliance and Enforcement**

The hunting and shooting of wildlife, including a collection of forest produces, are well controlled in the Protected Areas. Forestry activities are also not carried out in the Protected Areas. However, local communities and the poor are yet to realise the importance of Protected Areas.

### **Prevention and Settlement of Disputes**

Article 23 of the Wildlife Order has provisions for the prevention of offences. Article 36 has provision for compounding offences departmentally. However, there is no provision for settlement of disputes for eviction from Protected Areas and rehabilitation in other areas or to pay compensation to the affected people.

### **Judiciary interventions and Decided Court cases**

Article 27 and 28 of the Wildlife has provisions in respect of judicial interventions.

### **Emerging Issues and Trends**

Protected Areas have no separate entity from the adjacent areas or forests. Special and separate prescriptions for the management and development of Protected Areas are still lacking.

## **9. NATIONAL PARKS**

National Parks have been already been discussed under the Protected Areas issue. However, National Parks has been defined in the Wildlife Order, which means comparatively large areas of outstanding scenic and natural beauty are designated with the primary object of protection and preservation of scenery flora and fauna in the natural state to which access for public recreation and education and research may be allowed (Article 2 (h)). In Article 23(3), prohibitive measures of National Parks have been given. At present there are five National Parks in the Reserved Forests in Bangladesh.

### **Issues**

1. Legal provisions are not considered for management and development of National Parks.
2. Policy and common approach for management of National Parks are absent.
3. Lack of appropriately trained manpower for management of National Parks.

**Policy**

There is no policy for creation of National Parks in the country. The Forest Policy, 1994 includes principles for National Parks or Protected Areas.

**Institutional Structure**

Forest officials and field staff are deployed for management of National Parks. But the officials and staff have no proper training or specific knowledge for the management of National Parks and Wildlife.

**Legislation and Regulations**

Article 23 of the Wildlife Order contains the following measures for National Parks:

- i. Hunting, killing or capturing of any wild animal in a national park and within the radius of one mile outside its boundary;
- ii. Firing any gun or doing any other act which may disturb any wild animal or doing any act which may interfere with the breeding places of any wild animal;
- iii. Felling, tapping or burning or in any way damaging or destroying, taking, collecting or removing any plant or tree there from;
- iv. Clearing or breaking up any land for cultivation, mining or for any other purpose;
- v. Polluting water flowing in and through the national park;

The government may, for scientific purposes or for betterment of the national park or for aesthetic enjoyment of scenery or for any other exceptional reasons, relax all or any of the prohibitions specified above.

Article 23(4) contains provisions in respect of construction of access roads, rest houses and hotels and provision of amenities for public and these shall be so planned as may not impair the primary object of the establishment of a national park.

**Compliance and Enforcement**

National Parks are not yet virtually distinctive from adjacent forests. So compliance and enforcement of laws are as of Reserved Forests.

**Prevention and Settlements of Disputes**

Appropriate initiative is absent and so preventive activities are not considered necessary.

**Cases Judiciary Interventions and Decided Court Cases**

Same as Habitats and Poaching

**Emerging Issues and Trends**

1. Habitats are degrading very rapidly; and as a result, fauna and flora are declining.
2. Lack of proper initiatives for management as per legal provisions.

**10. ZOOLOGICAL PARKS**

There is no legal provision in the Wildlife Order for the establishment and management of Zoos or Zoological Parks or Zoological Gardens. At present there are two zoos in the public sector under the management of Livestock Department, Ministry of Livestock and Fisheries Resources, and there are three zoos under joint management of the government and autonomous/ semi-government bodies. The two government zoos are situated at Dhaka city and Rangpur. The other three zoos are situated at Chittagong, Rajshahi and Comilla.

The main objective of the establishment of zoos is to allow the exhibition of wildlife to the people, especially the city dwellers. The Forest Department has established three wildlife breeding centres each at Dula Hazara (Cox's Bazar Forest Division), Bhawal National Park (Dhaka Forest Division) and at the Sundarbans. The Forest Department also has a Wild Animal Corner at Madhupur National Park..

### **Issues**

- i Concept of ex-situ management of wildlife is not applied in the Zoos.
- ii. Legal arrangement in zoo management is absent
- iii Appropriate and dedicated personnel in the zoo management or in ex-situ management of wildlife is not included or is not available.

### **Policy**

There is no written policy for the establishment or management of zoos in Bangladesh. The respective departments control all aspects of the management of zoos/breeding centres. However, there is a National Zoo Advisory Board headed by the Minister in charge of the Ministry of Livestock and Fisheries Resources.

There is a provision in Article 4 of the Wildlife Order for constitution of a Wildlife Advisory Board. The Bangladesh Wildlife Advisory Board reconstituted in September, 1999 with 32 members headed by the Minister in Charge of Ministry of Environment and Forests.

### **Institutional Structure**

The curator is the chief executive of the Dhaka Zoo. This position, as well as other higher positions of this zoo, is held by the personnel of the Livestock Cadre (Agriculture Cadre Livestock Sub -Cadre). The officers of this sub-cadre are usually graduates in Veterinary science. There is no provision for Wildlife Biologists in the management of zoo in Bangladesh. Officers from Livestock Department also head the zoo at Rangpur. However, the management of the zoos at Chittagong, Rajshahi and Comilla are managed jointly by the staff of Local government and Livestock officers. The Livestock Department is not responsible for the overall management of these three zoos.

### **Legislation and Regulations**

Native wild animals for zoos are collected under the provisions of the Wildlife Order. Article 45 of the Wildlife Order has provisions for capture or trapping of wildlife from

the nature for scientific and public interest. Under this Article wild animals for zoos and other agencies (Natural History Section of the National Museum) are allowed for collection from nature through a gazette notification by the Ministry of Environment and Forest

### **Prevention and Settlement of Disputes**

Zoo Management Authorities maintain a liaison with Forest Department in respect of wild animal management in the zoo. Moreover, the Chief Conservator of Forests is a member of the Bangladesh National Council for Dhaka Zoo management. Zoo authority has to inform the Forest Department of the transfer and selling of wildlife from the zoo to other agencies or to an individual.

### **Judicial Intervention and Decided Court Cases**

This is not applicable for management of zoological Parks.

### **Emerging Issues and trends**

- i. Zoo authority has no arrangement for replacement of wild animals from and in the zoo with the Forest Department.
- ii. Equipment and trained manpower are insufficient.
- iii. Lack of modern concept of wildlife conservation in the zoo.
- iv. Lack of policy.

## **11. SANCTUARIES**

As per Article 2 (p) of the Wildlife Order, Wildlife Sanctuary means an area closed to hunting, shooting or trapping of wild animals and declared as such under Article 23 by the government as undisturbed breeding ground primarily for the protection of wildlife inclusive of all natural resources, such as vegetation, soil and water. At present, there are seven wildlife sanctuaries in the forest areas in the country.

### **Issues**

- i. Legal management for wildlife sanctuaries is absent.
- ii. Wildlife sanctuaries are not distinctive from adjacent forests. There is no trained manpower for wildlife sanctuary vis-à-vis protected areas of the country.
- iii. Poaching and illicit felling are still the main contributors to the degradation of the wildlife sanctuaries.

### **Policy**

There is no Policy for wildlife sanctuaries. Principles of wildlife conservation are included in Forest Policy, 1994. The Bangladesh Wildlife Advisory Board is the policy-making authority for wildlife conservation and wildlife sanctuaries. However, the Wildlife Board is not very functional.

### **Institutional Structure**

The Divisional Forest Officer (DFO's) is the main official of the Forest Department for management and also for preparation of proposals for the establishment of wildlife sanctuaries in his jurisdiction. He is assisted by the Assistant Conservator of Forests, the Range Forest Officers and Beat Officers. The Conservator of Forests supervises the activities of DFO's and the Conservator of Forests is accountable to the Chief Conservator of Forests. The Forest Department has field offices in the wildlife sanctuaries.

### **Legislation and Regulations**

As per Article 23 (2) of the Wildlife Order, no person shall:

- i. Enter or reside in any wildlife sanctuary; or
- ii. Cultivate any land in any wildlife sanctuary; or
- iii. Damage or destroy any vegetation in any wildlife sanctuary; or
- iv. Hunt, kill or capture any wild animal in any wildlife sanctuary; or
- v. Introduce any exotic species of animal into a wildlife sanctuary; or
- vi. Introduce any domestic animal or allow any domestic animal to stray into a wildlife sanctuary; or
- vii. Cause any fire in a wildlife sanctuary; or
- viii. Pollute water flowing in or through any wildlife sanctuary

The government may, for scientific purposes or for aesthetic enjoyment or betterment of scenery, relax all or any of the prohibitions specified above.

### **Emerging Issues and Trends**

1. Separate administration for wildlife sanctuaries are absent even after 20 years of establishment of wildlife sanctuaries.
2. Forests as well as other stakeholders have little seriousness of compliance and enforcement of regulations.
3. Wildlife as well as habitats are declining and degrading.

Violators of Article 23 shall be punished with imprisonment, which may extend from a minimum of six months to one year and also with a fine and the hunting license, gun, license under Arms Act 1978. Shooting permits or special permits issued to such a person shall be cancelled and the firearms, vehicles, water vessels, appliances or anything used in the commission of the offence including the wild animals, meat or trophy in his possession shall be confiscated (Article 26(1) (a)).

### **Compliance and Enforcement**

Wildlife sanctuaries are situated in the Reserved Forests and so they (Wildlife Sanctuaries) are not distinct from the reserved forests. For this reason, compliance of legal measures by the local communities and enforcement of the legal prohibitions cannot be distinctly detected. However, hunting and shooting of wildlife in the wildlife

sanctuaries is rare. Even then the enforcement of legal measures is low. This is due to a lack of appropriate personnel for wildlife management in the Forest Department.

In Article 37 of the Wildlife Order, provisions have been made to register arms for which licenses have been issued under Arms Act, 1878 and residing within five miles from the boundary of the wildlife sanctuaries, national parks and game reserves.

### **Prevention and Settlement of Disputes**

Preventive measures of disruption to wildlife sanctuaries are decidedly absent, except for the display of signboards. However, the staff of wildlife sanctuaries regularly patrols the wildlife sanctuaries. In Article 17 of the Wildlife Order there are provisions for local government employees and members, including the purchasers of forest produce who shall be bound in the absence of reasonable excuse, to give to officer information in respect of unauthorised or illegal activities against the offender.

Detection of disputes in and around wildlife sanctuaries is low. In respect of land, the disputes are tried in the court.

## **12. CIRCUS (BANNING/REHABILITATIONS)**

There is no provision under the Wildlife Order for wildlife to be kept by circuses. The circuses have licenses issued by the District Administration (Deputy Commissioner). In the past, the district authorities, while issuing permit for circuses, have approved possession of wildlife. Probably for this reason no circus party has declared their wild animals to the respective Divisional Forest Officer on the fixed date (31st January, 1974) as per Article 9(1) of the Wildlife Order. However, in more recent times there have been some circuses who have applied for registration of their wild animals under the Wildlife Order.

### **Issues**

- I. No data available on wildlife is kept in the circuses.
2. No circuses have taken permission for wildlife under the Wildlife Order
3. There is no rule under the Wildlife Order for wildlife of the Circuses.

### **Policy**

There is no policy for the possession and use of wildlife by circuses.

### **Institutional Structure**

The Chief Conservator of Forests, Bangladesh is the Chief Wildlife Warden (Part-II of the First Schedule). Networks of the Forest Department are spread in all forest areas of the country including all civil districts.

### **Legislation and Regulations**

Articles 9 and 10 of the Wildlife Order contain legal provisions in respect of control, custody or possession of wildlife. There are no rules or regulations under the Wildlife Order for possession of wildlife by the circuses.

### **Prevention and Settlement of Disputes**

There is no provision in the Wildlife Order for use of wildlife by the circuses. The circuses are permitted licensed by the district authorities (Deputy Commissioners) and the permits include all belongings of the circuses. As per provision of the Wildlife Order, Deputy Commissioners have no legal authority to issue licenses for wildlife for circuses. The possession of wildlife by circuses with the licenses of Deputy Commissioner is illegal.

### **Judiciary International and Decided Court Cases**

Article 28 describes that nothing contained in the order shall be deemed to prevent any person from being prosecuted under any other law for any act of commission or commission which constitutes an offence under this Wildlife Order or from being liable under any other law to any higher punishment than that provided by this Wildlife Order.

### **Emerging Issues and Trends**

Circuses are not now common in the country. Also, circuses have knowledge and awareness of the Wildlife Order.

## **13. TRADE IN ANIMAL PARTS**

Trade in wildlife under the Wildlife Order is legally dealt under Article 12,13,14 and 15, and trade for commercial purposes on the wildlife of the third schedule is not allowed. International CITES regulations are more important than domestic legislation in respect of trade in animal parts.

### **Issues**

- i. Demand of wildlife as well as animal parts is increasing.
- ii. Appropriate institutions are lacking for control and enforcement of legal provisions of trade in Animal (Wild) parts.
- iii. Lack of data on wildlife for which there is no scope to carry out trade on wildlife on sustainable basis.

### **Policy**

There is no policy for trade on wild animal as well as their parts and derivatives. Preparation of a wildlife conservation and export policy is in progress.

### **Institutional Structure**

The Chief Conservator of Forests is the implementing authority on the trade of wildlife. There are networks of forest offices under the control of the Chief Conservator of Forests.



However, the forest officials and staff of Forest Department have no training and have insufficient knowledge of wildlife.

### **Legislation and Regulations**

As per Article 12 of the Wildlife Order, no person shall import wildlife or its parts and derivatives:

- i. Except through a customs port of entry;
- ii. Unless lawful export permit of the country of export is submitted to the customs officer;
- iii. Unless an import permit is issued by the country of import under this Wildlife Order.

As per Article 13 of the Wildlife Order, no person shall export or attempt to export any wild animal or wild animal parts and derivatives:

- i. Except through customs of port of exit
- ii. Unless the exporter produces to the customs officer an Export Permit issued by the government under the Wildlife Order.

In Article 14, provisions for wild animals and wild animal parts and derivatives in transit through Bangladesh have been given. The provisions are as follows:

- i. Any wild animal or wild animal parts derivatives in transit through Bangladesh shall be accompanied by the necessary transit customs documents;
- ii. Shall be entered through a custom port of entry; and
- iii. Shall not be unloaded from the ship or motor vehicle or any carrier on which it is being carried, or in the case of air transport, shall not leave the precincts of the airport at which it is landed or transshipped without being checked nor shall, except in the case of customs warehouse remain in such precincts for more than 48 hours.

In Article 15 the provision of dealers' permits for trade on wild animals and wild animal parts and derivatives have been incorporated. As per this Article nobody shall carry businesses on wildlife or in their parts and derivatives without a dealers' permit issued by the government under the Wildlife Order.

### **Compliance and Enforcement**

Trade on wild animals or wild animals parts and derivatives without permission of the government is punishable offence under Article 26(a) of the Wildlife Order. Actual trade on wild animals and their parts and derivatives are not regular in Bangladesh. Since promulgation of the Wildlife Order in 1973, commercial trade on wild animals and wild animal parts and derivatives have been carried on very limited items. Forest officials as well as field staff and the customs and the police and other law enforcing agencies are empowered to deal with the illegal activities on wild animals and wild animal parts and derivatives under the provisions of the Wildlife Order.

**Prevention and Settlement of Disputes**

As per Article 33 of the Wildlife Order, every officer shall be competent to take lawful means to prevent the commission of an offence.

**Judiciary Intervention and Decided Court Cases**

The same as for poaching.

**Emerging Issues and Trends**

1. Increase of killing of Tiger, Deer and Crocodile in Sundarbans is known to be due to illegal trade on their parts (Skins & bones).
2. Elephants are known to be killed in the forests of Cox's Bazaar for body parts.
3. Snake charmers have an important role to regulate or sustainable use of venom of snakes.
4. Demand for wildlife (Turtles, Bears, Scaly Anteater etc.) has impact on declination of wild populations.

**14. BREEDING IN CAPTIVITY OF ENDANGERED SPECIES**

For restocking and rehabilitation of wildlife in the natural habitats, breeding of wildlife in captivity is necessary. In light of this necessity the Forest Department has installed two centres for wildlife breeding. The wildlife species in the breeding centres include mainly reptiles such as crocodiles, turtles and deer species. In some zoos, there are programs for breeding wildlife. There is no provision in the Wildlife Order for captive breeding of wildlife.

**Issues**

1. Wildlife breeding, especially that which has commercial importance, is recognised.
2. Policy, regulations, commitments and dedication are absent in relation to captive breeding in the country.
3. Knowledgeable persons do not show an interest in the breeding program of wildlife.

**Policy**

There is no policy for breeding wildlife in captivity.

**Instructional Structure**

The Ministry of Environment and Forest is the main authority to make decisions on captive breeding of wildlife. The Forest Department is the implementing agency.

**Legislation & Regulations**

There is no regulation for breeding in captivity of wildlife in the private sector. However, it is allowable under the Wildlife Order.

**Emerging Issues and trend**

All concerned authorities support the breeding of wildlife for rehabilitation and for trade.

**15. EXPERIMENTS ON ANIMALS (RESTRICTIVE)**

Article 45 of the Wildlife Order has provisions for the capture of wildlife from nature for scientific purposes or for public interest.

**Issues**

There is no issue on the subject.

**Policy**

There is no policy as per wildlife conservation and preservation is concerned.

**Institutional Structure**

The Ministry of Environment and Forest, and the Forest Department are responsible for wildlife conservation in the country.

**Legislation and Regulation**

There is no separate legislation. There is no regulation under the Wildlife Order.

**Prevention of Settlement of Disputes**

Forest officers and staff up to the rank of Foresters are empowered under the Wildlife Order to take lawful measures.

**Emerging Issues and Trend**

No issue has yet been reported or known.

**16. AQUATIC WILDLIFE/INCLUDING MARINE MAMMALS**

As per the definition of wildlife under the Wildlife Order, dolphins and whales are purely aquatic wildlife. Most species of reptiles and amphibians are to depend on water for completion of their life cycles, which includes species of crocodiles, turtles, frogs etc. In Bangladesh most of the reptilian species are under tremendous pressure due to their habitat loss. The population status of dolphins (except Range River Dolphin) is not known. The Ganga River Dolphin (*Platanistn gangetica*) is found in the big rivers of the country however, it gets confined in the deep water regions of the rivers during dry season. The whales are reported to be vagrant in the coast of Bangladesh.

**Issues**

1. Conservation initiatives for preservation and conservation of aquatic/marine wildlife are lacking.
2. Freshwater reptiles are very rapidly decreasing.
3. Breeding in captivity of freshwater turtles is essential.

4. Facilitation of nesting of sea turtles is needed.

### **Policy**

There is no policy for aquatic/marine wildlife.

### **Institutional Structure**

Ministry of Environment and Forest, and Forest Department are responsible for conservation of aquatic wildlife including marine mammals.

### **Legislation and Regulations**

The catching and trapping of wildlife including dolphins, whales, turtles etc is prohibited under the Wildlife Order (Article-5 and 6).

### **Compliance and Enforcement**

Enforcement is very difficult due to lack of institutional infrastructure and networks. People are aware of the legal restrictions of trapping and collecting wildlife but these acts nevertheless continue to occur.

### **Emerging Issues**

1. Wildlife and their habitats are degrading very rapidly.
2. People are interested in the commercial aspect of wildlife.
3. Ecological condition is very unfavorable for reproduction and increase of wildlife population.

## **17. WETLANDS**

As per the sanctioned definition of wetlands in the Order, bils, haors, rivers, and estuaries, including the Sundarbans, are wetlands in Bangladesh. These areas remain under water almost throughout the year except haors, which are under water for five months in the monsoon season. Most of the flood plains of the country, lakes and ponds, including shrimp farms, are also called wetlands. Thus about 50% of the total area of the country is wetlands.

### **Issues**

1. Economic activities in the wetlands are not sustainable with the resources as well as ecological functions.
2. Required data for planning and management of wetlands are not available.
3. There is no inventory of wetlands in the country.
4. People are not aware of importance of wetlands.
5. There is no proper enforcement of laws in the wetlands.

### **Policy and Institutional Structure**

A wetland policy is available in draft but the government has not yet approved this. However, Forest Policy, Environment Policy, Fishery Policy, Water Policy have included programs in or for wetlands. The Ministry of Environment and Forest through Forest

Department and Ministry of Land through the Deputy Commissioners (D. C) are responsible for the management of wetlands in Bangladesh. A Directorate of Fisheries of the Ministry of Livestock and Fisheries Resources also deals with conservation and management activities in bils, rivers, lakes etc. The Department of Environment of the Ministry of Environment and Forest can declare “Ecologically Critical Area” (ECA) in the wetlands if it deems so under the Environment Act, 1995.

### **Legislation and Regulations**

The following Acts and Rules are effective in the wetlands of Bangladesh:

1. The Forest Act, 1927
2. Bangladesh Wildlife (Preservation) Order, 1973. (The Parliament passed it into Act in 1973 and also amended in 1974 as Bangladesh wildlife (Preservation) (Amendment) Act, 1974).
3. Environment Act, 1995
4. Fish Act, 1950.
5. Forest Policy, 1995
6. Environment Policy, 1992
7. EIA Rules (Department of Environment)
8. The Crab Exports Rule, 1998.

### **Compliance and Enforcement**

Execution of laws and legislation can not be efficiently enforced in the wetlands. The main reason for this conclusion is that the wetlands are situated in the remote areas. The socio-economic condition of the country is also an important factor for enforcement of laws relevant to the conservation of wildlife and fish.

### **Prevention and Settlement of Disputes**

Prevention of illegal activities is difficult in the wetlands, because they are the remotest areas.

### **Judicial interventions and Decided Court Cases**

The disputes are tried and settled in the courts.

### **Emerging Issues**

1. Siltation of wetlands.
2. Water pollution
3. Lack of initiatives for intensive and scientific management.

### **Impact on health**

1. Community disease such as diarrhea, cholera, skin disease etc.
2. There are fish diseases probably due to water pollution.

## **18. CRUELTY TO ANIMALS**

There is a society for prevention of cruelty to animals in Bangladesh. Its functions are carried out under the assistance/control of the Ministry of Livestock and Fisheries. The Minister for Fisheries and Livestock is the Chairperson of the Executive Committee of the Society. The President of the People's Republic of Bangladesh is the head of the Society under section 3 for the Prevention of Cruelty to Animals Ordinance 1962 (E.P. Ordinance XV of 1962).

**Issues**

1. People are ignorant of cruelty to animals.
2. Initiatives for the prevention of cruelty to animals are absent.
3. Proper publicity on prevention of cruelty to animals is absent.

**Policy**

There is no policy for prevention of cruelty to animals.

**Institutional Structure**

There was a rudimentary field staff implemented for the prevention of cruelty to animals under the Bangladesh Society for Prevention of Cruelty. The staff included an: Inspector – 1, Sub-Inspector – 3, Constable - 5. At present the staff is no longer in operation due to the lack of salary.

**Legislation and Regulations**

The Bengal Cruelty to Animals Act, 1920.

## CHAPTER XIV

### SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: ECO-TOURISM

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

**Key Legislation:** National Environment Conservation Act, 1995; Bangladesh Wildlife (Preservation) Act, 1973; Wildlife (Preservation) Order, 1974; Factories Act, 1965; Forest Act, 1927; Regulation of Foreigners, 1979; Regulation of Foreigners rules, 1996;

**Key Institutions:** Bangladesh Porjaton Corporation; Tour Operators Association of Bangladesh

#### 1. INTRODUCTION

Bangladesh has two “hot spots” from the viewpoint of eco-tourism. The first one is the unique and magnificent Sundarban Mangrove Forest, which is the world's largest mangrove forest and the home of the world renowned Royal Bengal Tiger, the most ferocious predatory animal on earth. The other is the Chittagong hill districts, where 13 tribal peoples live in an area of about one thousand square miles. Unfortunately, both of these areas are almost unknown to the ecotourists of the outside world and, as such they fail to attract many ecotourists. Being the World Natural Heritage site, as declared by UNESCO, the mangrove forest now belongs not only to Bangladesh, but also to the whole world, though the responsibility to protect the forest lies on Bangladesh. Bangladesh Porjaton Corporation, the National Tourism organisation, and the Tour Operators Association of Bangladesh (TOAB) co-ordinate a seminar on eco-tourism on World Tourism Day. The keynote paper presented in the seminar was titled “Ecotourism: a key to sustainable development” at the World Ecotourism Summit held in Quebec City, Canada. In response to the need for increased ecotourism, the Bangladesh government has taken some steps to develop tourist facilities in the Sundarban forest.

#### 2. BIODIVERSITY AND ECOTOURISM

These facilities will be developed in strict accordance with the idea of ecotourism. To protect the biodiversity of the forest, the government has allocated a fund of about US \$240 million. Bangladesh has expressed some reservation about increased pleasure tourism, but is willing to embrace ecotourists from all over the world particularly as the Sundarban Mangrove Forest deserves attention from ecotourists. The ecotourism

organisations worldwide have failed to highlight, until now, unknown destinations like Sundarban forest, Chittagong hill districts and some other unknown ecotourism spots across the world. This failure has largely been due to the over emphasis on already popular tourist destinations.

### **3. ECOTOURISM AND NGOs**

There are many challenges for the improvement of ecotourism ventures in Bangladesh. First, the organisers must be ready for a difficult undertaking, particularly as villages usually are not prepared for a highly dynamic and service-oriented tourism undertaking. As eco-tourism is an almost alien concept to them, some villagers will find it hard to accept that the usual hospitality they give to strangers or friends would be equated with payment. The difficult part is making them work as a community towards achieving a successful environmental and economic undertaking, such as ecotourism. One way that is proven effective is the NGO approach in community organisation by identifying and tapping into the interests of the relevant stakeholders. Co-operation of local people is a necessity. This process usually takes a minimum of one to two years (although its common to hear of a community organising project that takes up to five years). Another important component is to provide the necessary training to locals, equipping them with the essential skills and an appreciation of the tourism needs. It is important to identify the local leaders (but not necessarily the government personnel) and make them part of the over-all tourism planning in the area. The local leaders will have to carry the burden, so it is important to give them the power to lead as early as possible. Such power includes an appreciation that they will have to learn the intricacies of tourism over time, and the power to make key decisions. In light of this immense responsibility and disruption to village community life, many would shy away from actual contact with foreign visitors and would rather go on with their lives.



## CHAPTER XV

### STATUTORY TOOLS

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

**Key Legislation:** Environmental Conservation Act, 1995; Forest Act of 1927 National Environmental Impact Assessment Guidelines 1993; Environment Conservation Rules 1997; Penal Code 1860; Explosives Act 1884; Bangladesh Wildlife (Preservation) Act, 1973; Bangladesh Wildlife (Preservation) Act, 1973; The Antiquities Act 1968 as amended by the Antiquities (Amendment) Ordinance 1976; Groundwater Management Ordinance 1985; Public Health (emergency provisions) Ordinance, 1944; The Factories Act 1965; Protection and Conservation of Fish Rules 1985; Pesticide Ordinance, 1971; Brick Burning (Control) Act, 1989; Boilers Act, 1923

**Key Institutions:** Ministry of Environment and Forest; The Ministry of Planning; National Environmental Council; Department of Forests; International Institutes of Environment; Forest Research Institute, Bangladesh; Forest Industries Development Corporation; Institute of Forestry and Environmental Sciences

#### 1. INTRODUCTION

The environmental aspects are addressed by the regulatory regimes of policies legislation and institutions. In Bangladesh, there are about 186 laws related to the environment. A comprehensive Environment Conservation Act was enacted in 1995 for the protection and conservation of the environment. In response to the National Environment Policy, 1992, the critical pieces of environmental legislation have been set as the framework for environmental management of the country. These critical legislative enactments include:

- i) The 1995 Environmental Conservation Act
- ii) The Environmental Conservation Rules of 1997
- iii) The 1997 EIA Guidelines for Industries
- iv) The 1999 Environmental Court Act.

The 1995 law is an enabling act, which gives the Ministry of Environment and Forest (MoEF) the power to draw up rules and guidelines for managing the environment. The law also designates the Department of Environment (DoE) as the responsible body for enforcing the EIA procedures outlined in the 1997 Rules, along with the legal procedures to be followed for implementing the EIA process. The rules also designate four classes of possible interventions by degree of expected environmental impact. The Environmental

Conservation Rules also contain national environmental standards, including those for water quality standards for different sectors and purposes. There are approximately 182 laws that have a bearing on environment in Bangladesh however, most of these laws remain ineffective due to many legislative and institutional failures. Such failures include a lack of rules, identification of institutions responsible for enforcement, absence of statutory environment quality standards and a lack of legal education and awareness. A National Environment Policy was adopted in 1992 that provides sectoral policy guidelines in combating and promoting environmental matters.

## **2. STANDARDS**

The National Environmental Quality Standards are given in the Environmental Conservation Rules of 1997 (Bangladesh). These set a range of water quality criteria and limits depending upon the intended uses, including use for human drinking water, livestock drinking, fisheries, recreation, irrigated agriculture and industry. Discharge standards are also specified by sources, including public sewage outfalls, irrigation water and specific types of industrial discharges by size. The overriding problem of environmental standards in Bangladesh is the difficulty in enforcing these provisions. Moreover, the regulations are essentially “end-of-pipe” standards, or mere abstracts of legislative intent. Although, there is an Ambient Water Standard, it covers none of the many chemical pollutants known to be discharged. There is no effective regulation that takes into account the ability of rivers to dilute and disperse effluent, especially in times of low flow, and under complex cumulative discharge patterns. These cumulative impacts are crucially important for the natural aquatic environment.

With EPA, proposals for all plans, programs and projects that are likely to impact on the environment, irrespective of their ownership, will need to be submitted to the government agencies concerned for approval through IEE and EIA reports. Responsibility to conduct IEE resides with the implementing agencies and all cases requiring an EIA must be referred to the Ministry of Populations and Environment.

The National Environmental Impact Assessment Guidelines 1993 states that a draft EIA report must be released for public review and comment. The review of the draft report and comments should be made available for review by the project proponent, NGOs and the concerned public.

## **3. ECONOMIC INSTRUMENTS**

EPA makes provision for rebates and facilities to any industry, commercial activity and technological innovation resulting in a positive impact on the environment. The Industrial Enterprises Act, 1992, requires that permission shall be granted for reduction of up to 50% from the taxable income for the investment of an industrial process or equipment which has the objective of controlling pollution or which may have a

minimum effect on the environment. Under the EPA the government can provide additional facilities to those already provided under existing laws, to any industry, occupation, technology or process that has a positive impact on environmental protection. In tackling the environmental problems of the country various environmental legislation has been implemented in Bangladesh. Similar to other countries, environmental laws deal specifically with land use, air and water pollution, noise, toxic chemicals, solid waste, forest conservation, wildlife protection, mineral resources and coastal zone management, industry, environmental health and sanitation etc.

Some of the laws now in force, such as the Forest Act of 1927 were inherited. Others were enacted after 1947 to accommodate and address the issues as they arose. These laws were of use when they were initially enacted but do not satisfy present needs. Moreover, the environmental situation of the world and within Bangladesh has changed considerably, and as such, to improve environmental management a review and modification of related laws is necessary to accommodate these changing circumstances.

Environmental legislation in Bangladesh currently deals with issues relevant to the:

- i. Protection of environmental health
- ii. Control of environmental pollution, and
- iii. Conservation of natural and cultural resources. This categorisation is made on the basis of broad objectives of the environmental laws existing in Bangladesh.

The existing laws are not mutually exclusive. It is obvious that many of the laws falling in one category are bound to relate to objectives falling within other categories. This is a natural consequence of the reality that environmental protection is a multisector phenomenon and is not limited to any particular aspect of nature. The major legislative enactments are listed below:

#### **4. RELEVANT LEGISLATION**

The major legislative enactments are listed below with each legislative enactment referred to in depth in Chapter III:

1. Bangladesh Environmental Conservation Act (ECA, 1995)
2. The Environment Conservation Rules 1997 (ERC, 1997)
3. The Penal Code 160 (Chapter XIV of offences affecting the Public health, safety, convenience, decency and morals)
4. The Explosives Act 1884
5. The Explosive Substances Act 1908
6. Bangladesh Wildlife (Preservation) Act 1973
7. Bangladesh Forest Act 1927
8. Antiquities Act 1968 as amended by the Antiquities (Amendment) Ordinance 1976
9. Groundwater Management Ordinance 1985

10. Groundwater Management Rules
11. Public Health (Emergency Provisions) Ordinance 1944
12. Factories Act 1965
13. Protection and Conservation of Fish Rules 1985
14. Pesticide Ordinance, 1971 - as amended by the Agricultural pesticides (Amendment) Act 1980 and the Agricultural Pesticides (Amendment) Ordinance 1983
15. Brick Burning (Control) Act 1989 (Act Number 8 of 1989)
16. Brick Burning (Control) (Amendment) Act 1992
17. Boilers Act 1923

## CHAPTER XVI

# MULTILATERAL ENVIRONMENT AGREEMENTS AND THEIR IMPLEMENTATION

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**Key Issues:** Implementation of MEA's; Technology Transfer; Inbuilt Funding Mechanism; Synergy with other Agreements; Informed Negotiations, Coordination of Secretariats; Education and Awareness; Enforcement and compliance

**Domestic Legislative Measures:** Bangladesh Environment Policy, 1992; Forest Policy 1994; Forest Master Plan, 1996; Integrated Forest Management, 1995; Bangladesh Wildlife (Preservation Amendment) Act, 19974; National Biodiversity Strategy; Bangladesh Environment Conservation Act 1995; Destructive Insects and Pests Act, 1914; The Poisons Act, Imports and Export Control Act. 1950; The Dangerous Cargoes Act 1953; the Factories Act, 1965; The Customs Act, 1969; The Agricultural Pesticides Ordinance. 1971; Bangladesh Petroleum, 1974; Drugs (control) Ordinance 1982; The Forest Act, 1972; The Protection and Conservation of Fish Act, 1950; The Government Fisheries Protection) Act, 1959; The Agricultural Pesticides Ordinance, 1971; The Bangladesh Wildlife (Preservation) Order, 1973; The Seeds Ordinance, 1977; The Marine Fisheries Ordinance, 1983, The Highways Act. 1952; The Vehicles Act, 1927 Factories Act 1965; The Petroleum Act, 1974; The Motor Vehicle Ordinance, 1983

**Key Institutions:** The Department of Forest; Ministry of Environment and Forest; The Ministry of Planning; National Environmental Council; Department of Forests; International Institutes of Environment;

### 1. INTRODUCTION

Bangladesh has taken part in numerous international negotiations from which have emerged treaties, conventions, agreements and protocols. This participation is based on the recognition that only through involvement of all countries will the global community be able to take appropriate measures to protect a common heritage. However, there are limitations to the country's participation and the subsequent implementation of any agreement reached with the international community.

In response to the growing consciousness of global environmental threats, Bangladesh has so far signed, ratified and acceded to 22 international conventions, treaties and protocols related to the environment. The most significant ones were signed at the UN Conference on Environment and Development (UNCED), held at Rio de Janero, Brazil in 1992. The Agenda 21, Climate Change Convention and Bio Diversity Convention is one convention that is of particular importance in the sphere of environmental

conservation. The Agenda 21 provides the basis for attaining sustainable development through policies initiated and coordinated at the National level.

In light of Bangladesh's commitment as a signatory to these international and regional treaties, conventions and protocols, further efforts will be necessary to ensure that no irreparable damage is inflicted to the environment and prosperity is sustained in the long run. The UNEP has brought out a list of 200 agreements on environment related topics. Several are related to specific areas or regions, not covering Bangladesh. However, there are some which have relevance in the context of the country. These are currently being examined with a view to determining which among them may be adhered to.

## 2. INTERNATIONAL CONVENTIONS/TREATIES/PROTOCOLS (ICTPS) SIGNED, RATIFIED OR ACCESSED BY BANGLADESH

SL. No.	Convention/Treaty/Protocol	Signed	Ratified/Accessed Accession	In the process of ratification
1.	International Plant Protection Convention, Rome, 1951.		01.09.78	
2.	International Convention for the Prevention of Pollution of the Sea by Oil, London, 1954 (as amended on 11 April 1962 and 21 October 1969)		28.12.81 (entry into force)	
3.	Plant Protection Agreement for the South East Asia and Pacific Region (as amended). Rome 1956.		04.12.74 (AC) (entry into force)	
4.	Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, Moscow, 1963.	13.03.85		
5.	Treaty on Principles governing the Activities of States in the Exploration and use of outer Space including the Moon and Other Celestial Bodies, London, Moscow, Washington, 1967.		14.01.86(AC)	
6.	International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualities, Brussels, 1969		04.02.82 (entry into force)	
7.	Convention on Wetlands of International importance especially as Waterfowl Habitat, Ramsar, 1971 (Popularly known as Ramsar Convention).		20.04.92 (ratified)	
8.	Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxic Weapons, and on their Destruction, London, Moscow, Washington, 1972.		13.03.85	
9.	Convention Concerning the Protection of the World Cultural and Natural Heritage, Paris,		03.08.83 (Accepted)	

## List of Abbreviations

	1972.		03.11.83 (ratified)	
10.	Convention on International Trade in Endangered Species of Wild Fauna and Flora, Washington, 1973 (Popularly known as CITES)	20.11.81	18.02.82	
11.	United Nations Convention on the Law of the Sea, Montego Bay, 1982.		10.12.82	
12.	Vienna Convention for the Protection of the Ozone Layer, Vienna, 1985		02.08.90(AC) 31.10.90 (entry into force)	
13.	Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal 1987.		02.08.90 (AC) 31.10.90 (entry into force)	
14.	London Amendment to the Montreal Protocol on substances that Deplete the Ozone Layer, London, 1990. Copenhagen Amendment.		18.03.94 (AC) 16.06.94 (entry into force) June, 1996	
15.	Convention on Early Notification of a Nuclear Accident, Vienna, 1986.		07.01.88 (ratified) 07.02.88 (entry into force)	
16.	Convention on Early Notification of a Nuclear Accident, Vienna, 1986.		07.01.88 (ratified) 07.02.88 (entry into force)	
17.	Agreement on the Network of Aquaculture Centres in Asia and the Pacific, Bangkok, 1988		15.05.90 (ratified)	
18.	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Basel, 1989.		01.04.93(AC)	
19.	International Convention on Oil Pollution Preparedness, Response and Cooperation, London, 1990.	30.11.90		
20.	United Nations Framework Convention on Climate Change, New York, 1992.	92	16.02.94	
21.	Convention on Biological Diversity, Rio De Janeiro, 1992.	05.06.92	20.03.94	
22.	International Convention to Combat Desertification, Paris, 1994.	21.06.94		Ratified by cabinet during October 1995.
23.	Convention on the Prohibition of Military or Any other Hostile Use of Environmental Modification Techniques, Geneva, 1976		03.10.79(AC) (entry into force)	
24.	Agreement related to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, New York, 1994.	28.07.96		
25.	Agreement for the implementation of the Provisions of the United Nations Convention on	04.12.95		

	the Law of the Sea of 10 December 1982 Relating to the Conservation and management of Straddling fish Stocks and Highly Migratory fish Stocks, New York, 1995.			
26.	Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, Paris, 1993	14.01.93		
27.	United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, Paris, 1994	14.10.94	26.01.96	
28.	Convention on Nuclear Safety, Vienna, 1994	21.09.95	21.09.95 (AT)	

### 3. CONVENTION ON WETLANDS OF INTERNATIONAL IMPORTANCE ESPECIALLY AS WATERFOWL HABITAT, RAMSAR 1971

#### Major Concerns:

The major concerns of the convention have been to stem the progressive loss of wetlands, which is currently occurring and is likely to continue to occur in the future. This requires recognition of the fundamental ecological functions of wetlands and their economic, cultural, scientific and recreational value.

- (a) Each Contracting Part shall designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance.
- (b) The Contracting Party shall consider its international responsibilities for the conservation, management and wise use of migratory stocks of waterfowl.
- (c) Parties to establish wetland nature reserves. Cooperate in the exchange of information and train personnel for wetland management;
- (d) Conferences on the conservation of wetlands and waterfowls to be convened as the need arise.

#### National Measures for Implementation

Bangladesh is a signatory to this convention, which primarily aims to aims to protect threatened wetlands. Although Bangladesh has several significant wetlands of international importance, none of them have been included in the Ramsar Convention list of threatened wetlands of international significance. Bangladesh has some significant publications but is a minor player.

### 4. CONVENTION FOR THE PROTECTION OF THE WORLD CULTURAL AND NATURAL HERITAGE

#### Major Concerns



To establish an effective system of collective protection of the cultural and natural heritage of outstanding universal value organised on a permanent basis and in accordance with modern scientific methods.

### **National Measures for Implementation**

The Sundarbans, which are the world's largest mangroves, were formally recognised as a World Heritage site by UNESCO on December 6, 1997. Prime Minister Sheikh Hasina on 4 February officially unveiled the world Heritage sites plaque at a ceremony in Sundarbans.

This is the first time that the World Heritage Committee of UNESCO recognised a mangrove forest as a World heritage. The 1,400 Square Kilometers of the forests have been recognised as of “exceptional universal value”. The total area of the Sundarbans World Heritage site is composed of three wildlife sanctuaries—the East Wildlife Sanctuary, the South Wildlife Sanctuary and the West Wildlife Sanctuary.

The total area of the World Heritage site is 1,400 Sq. Km. which has been affected in part by the the top dying of the sandari trees. If this trend continues then it will not be possible to maintain the heritage of the Sundarban. The lack of sweet water flow in the tributaries of the Padma flowing through the Sundarbans has increased salinity in the area, which caused the top dying of sandari trees. The Government has approved a Tk. 382 core biodiversity conservation project to protect the forest.

Indiscriminate deforestation, air pollution, the dumping of toxic waste into the water and an ever-growing list of similar contributing factors, continues to have destructive consequences. The Sundarbans have not been spared of this excessive destruction and in the process of environmental degradation the Royal Bengal Tiger and many other animal and vegetable species have become endangered.

## **5. CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA, WASHINGTON, 1973**

### **Major Concerns**

The Convention makes it mandatory for parties to take the following minimal measures to give effect to and enforce its provisions. The underlying duty of the parities is embodied in Article VIII, which emphasises that they shall take appropriate measures to enforce the provisions of the Convention, and to prohibit trade in specimens in violation thereof. Parties must at least take the following action:

- Penalise trade in, or possession of such specimens, or both;
- Provide for the confiscation or return to the state of export of such specimens.

Additionally, it is in the discretion of individual parties when they deem it necessary to provide for any method of internal reimbursement for expenses incurred as a result of the

confiscation of a specimen traded in violation of the measures taken in the application of provisions of the convention. Parties are also required to designate one or more Management Authorities and to designate one or more Scientific Authorities.

### **National Measures for Implementation**

Bangladesh became a party to the Convention on International Trade in Endangered Species Wild Fauna and Flora (CITES) in 1981. This carries with it certain obligations with regard to the flow between the conservation of flora and fauna identified and accepted as endangered or threatened. Any export of those flora and fauna included in the list must therefore be accompanied by approval from the authorities convened.

### **Administration**

The administration and enforcement of the convention is handled by the Department of Forest

### **Domestic Legislation**

The existing local legislation, which is the leading authority on wild life, is the Bangladesh Wildlife (Preservation Amendment) Act, 1974. The main provisions of the Act are as follows:

- (1) The wild animals specified in the first Schedule shall be known as ~~game~~ "animals" and shall not be hunted, killed or captured, save in accordance with the terms of permit.
- (2) The wild animals specified in the Third Schedule to this Act shall be known as ~~Protected Animals~~ "Protected Animals" and shall not be hunted, killed or captured save as otherwise expressly provided in this Act.

The Act provides that no person shall

- (a)
  - (i) Hunt any wild animal by means of set-gun, drop spear, dreadful gun trap, an explosive projectile bomb, grenade, electrical contrivances, an baited hook or any other trap whatsoever,
  - (ii) Hunt any game animal by means of an automatic weapon of a calibre used by the Bangladesh Army, Bangladesh Rice or Police Force, a shot gun, rifle of 22 calibre or less, or a projectile containing any drug or chemical substance having the property of anaesthetising, paralysing, stupefying or rendering a wild animal crippled whether partly or totally;
- (b)
  - (i) Use any motor vehicle, motor driven vessel, watercraft of any type or aircraft or any other manually or mechanically propelled vehicle of any type to pursue any game animal, or to drive or stampede game animals for any purpose
  - (ii) Use or have in his possession any person or like injurious substance for the purpose of hunting a game animal;
  - (iii) Shoot any game animal from any aircraft, motor vehicle, rail trolley cart, boats or any kind of watercraft or any other conveyance;
  - (iv) Hunt with the help of live decoys, call birds or any other artificial contrivances

- (c) Construct or use or have in his possession any pitfall, game pit, trench or similar excavation or any fence or exposure, or set fire to any vegetation or any other contrivance for the purpose of hunting any game animal.
- (i) No person shall transfer by gift, sale or otherwise to any other person any wild animal, meat or trophy of any kind unless he is in possession of a certificate of Lawful Possession of respect thereof.
- (ii) No person shall receive by gift, purchase or otherwise any wild animal trophy or meat unless he receives at the same time a valid Certificate, of lawful possession in respect thereof.

Further, the act provides:

- (1) No person shall import or attempt to import into Bangladesh any live wild animal of an endemic or exotic species, or any trophy or meat of a kind specified in the Second Schedule, -
- (i) except through a customs port of entry;
- (ii) unless he produces to the Customs Officer satisfactory proof that such wild animal, trophy or meat has been lawfully exported from the country of export;
- (iii) unless he produces an Import Permit issued by the Government under this Act.
- (2) It shall be the duty of a Customs Officer to detain any live wild animal of any trophy or meat of any kind specified in the Second Schedule until the documents required by clause (1) have been produced to him and if those documents are not produced within a reasonable time, the wild animal, trophy or meat shall be forfeited and disposed of in such manner as may be prescribed.

The Act also provides:

- (1) No person shall export or attempt to export any wild animal, trophy or meat except those mentioned in the First Schedule, -
- (i) Except through a customs port of Exit;
- (ii) Unless he produces to the Customs Officer an Export Permit issued by the Government under this Act.
- (2) An Officer may issue, or refuse to issue without assigning any reason, an Export Permit to the owner having the certificate of lawful possession of any wild animal, trophy or meat of any kind specified in the First Schedule, and in case of receipt of such Export Permit the owner of the wild animal, trophy, or meat shall immediately surrender to the said officer Certificate of lawful possession relating thereto.

The Department of Forest is presently implementing number of projects to protect and to create public awareness regarding CITES.

## **6. CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS (1979)**

**Major Concerns**

To recognise that the States are and must be the protectors of the migratory species of wild animals that live within or pass through their national jurisdictional boundaries.

**7. UNITED NATIONS CONVENTION ON THE LAW OF THE SEA****Major Concerns**

The United Nations Convention on the Law of the Sea received considerable attention on the protection and preservation of marine environment and has gone a long way in laying down many important provisions on controlling marine oil pollution. The articles on the protection and preservation of the marine environment, which finally emerged as Part. III of the Convention, represent the first attempt to set out a general framework for a legal regime that establishes on a global conventional basis the obligations, responsibilities and powers of the States in all matters of marine environmental protection.

**8. VIENNA CONVENTION FOR THE PROTECTION OF THE OZONE LAYER (1985)****Major concerns**

To protect human health and the environment against adverse effects resulting from modifications of the ozone layer.

**9. MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER (1987)****Major Concerns**

The objective of the Protocol is to protect the ozone layer by taking precautionary measures to control global emissions of the substances that cause its depletion.

The provisions of the Protocol, inter alia, in short are:

- a) Annual consumption and production of substances named in Annex A at the 1986 annual level; for substances in both Groups I and II, of Annex A commencing 7 months and 36 months, respectively, after the Protocol enters into force;
- b) Annual consumption and production of the substances in Group I to be reduced to fifty percent of the 1986 annual level from July 1, 1988 (Article 2);

Developing countries consuming less than 0.3 Kg per capita of the controlled substances, with the entry into force of the Protocol for them, respectively, may delay compliance with paragraphs 2, 3 and 4 of Article 2 of the Protocol by ten years, provided that during that period they do not exceed 0.3 Kg per capita (Articles 2 and 5). A year after the entry of the Protocol into force, Parties may not import the substance

from a non-Party to the Protocol. After January 1993, developing countries may not export such substances to a non-Party (Articles 4-5). The Protocol, which operates within the framework of the Vienna Convention for the Protection of the Ozone layer, provides for measures of exchange of technology and information, the calculation of control levels and assessment and review of the progress achieved.

### **The Protocol amendments**

1990 (London Amendment), in 1992 (Copenhagen Amendment) and in 1997 (Montreal Amendment).

### **Implementation status in Bangladesh**

Bangladesh acceded to the London Amendment on March 18, 1994 while the date of entry into force has been June 16, 1994. The Cabinet approved accession to the Copenhagen Amendment in 1996. Furthermore, the following activities have taken place in Bangladesh regarding implementation of the Protocol.

- i) A Reconnaissance Survey of ODS use was conducted in 1993.
- ii) A plan has been formulated to phase-out ODS in 1994.
- iii) A National Technical Committee on Ozone Depleting Substances was constituted in the Ministry of Environment and Forest in 1995.
- iv) Ozone Cell has been constituted in 1995 in the Department of Environment to oversee ODS phase-out activities.
- v) ODS-use has been inventoried for the years 1994, 1995, 1996 and 1997.
- vi) Draft economic and legal policies for ODS Phase-out in Bangladesh have been framed.
- vii) Training Programs were organised for technicians working in various refrigeration and air-conditioning service shops in 1999.

## **10. BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL (1989)**

### **Major concerns**

The objective of the convention has been to set up obligations for parties with a view to (a) reducing the transboundary movement of wastes subject to the Basel Convention to a minimum consistent with the environmentally sound and efficient management of such wastes; (b) minimising the amount and toxicity of hazardous wastes generated and ensuring their environmentally sound management (including disposal and recovery operation).

### **Implementation status in Bangladesh:**

Bangladesh signed the Basel Convention on the Control of Transboundary Movements of Hazardous waste and their Disposal on 22 March 1989, acceded on April 1993 and the Convention entered into force on 30 June 1993.

Bangladesh is committed to implementing the Basel Convention and the Government of Bangladesh has already adopted the Environment Conservation Act 1995. The Act provides a specific definition of hazardous wastes and has covered broad aspects of the management. It may be mentioned that the Government of Bangladesh has also adopted –Coast Guard Act 1994: which, aims to prevent the illegal traffic of hazardous wastes. As Bangladesh has very limited technical knowledge and inadequate facilities for identification, treatment and safe disposal of hazardous wastes, a ban has been imposed on the import of all forms of wastes in the Import Policy Order 1997 –2002. The export of waste from Bangladesh has also been banned.

A Project captioned –Regulatory Framework on Import of Hazardous and Toxic Materials" was implemented with funding from the Asian Development Bank in 1995. The Report of the project is still under consideration at the appropriate levels of the government.

A project on chemical safety is under implementation under the Department of Environment with funding from the World Health Organization.

## **11. CONVENTION ON BIOLOGICAL DIVERSITY**

### **Major Concerns**

The objectives of the Convention are to conserve biological diversity, promote sustainable use of its components and encourage equitable sharing of the benefits arising out of the utilisation of genetic resources. Such equitable sharing includes appropriate access to genetic resources as well as appropriate transfer of technology, taking into account the existing rights over such resources and technologies.

### **National Measures for Implementation**

The conservation of biological diversity was a major objective of the Earth Summit, and one of the conventions agreed upon was the convention on Biological Diversity. According to Agenda –urgent and decisive action is needed to conserve and maintain genes, species and ecosystems, with a view to the sustainable management and use of biological resources". The government endorsed this view when it signed the convention in Rio, and ratified it in 1994. The convention calls for developing national strategies, plans or programs for the conservation and sustainable use of biological diversity. Subsequently, on the urging of IUCN, many countries have prepared the National Biodiversity Strategy and Action Plan.

Among the other recommendations of the conventions, Bangladesh's government has begun work on *in-situ* and existing conservation and along with NGOs and IUCN has promoted public education and awareness of the importance of biodiversity. IUCN has also been instrumental in assisting in the preparation of a National Bio-legal and Institutional Profile, however much more needs to be done. The NCS Implementation Project, which begun in 1995, has as its objective the conservation of wetlands, forest areas and the coral island in conjunction with the survey of flora and fauna in light of

socioeconomic, ecological and demographic issues. The Convention calls for identification of ecosystems and habitats containing high diversity and species and communities, which are threatened. This systematic work cannot possibly be undertaken without a National Biodiversity Strategy. The Bangladesh National Biodiversity group has been formed under the aegis of IUCN.

The revival of the wildlife Division in the forest Department has given a new lease of life to the efforts to preserve species and their habitats. Early in 1996 the Wildlife Sanctuaries in the Sundarban forest were declared as World Heritage Sites. This will no doubt give an impetus to preserving Biodiversity. Many sites have been suggested as possible protected areas and the government has them under active consideration. The NGO members of IUCN and IUCN Country Office has issued five posters on the Wildlife of Bangladesh, which has promoted awareness of the natural resources. NGOs have also published booklets on birds and trees for children in non-formal primary schools.

Closely related to Biodiversity is the issue of Biotechnology. Agenda 21 calls for environmentally sound management of biotechnology. This requires global partnerships, because most of the expertise and investments are in the developed countries and most of the biological resources are in the developing countries. This is a new area of research, investment and development in Bangladesh and so far little has been achieved.

## **12. UNITED NATIONS (1992) FRAMEWORK CONVENTION ON CLIMATE CHANGE (1992)**

### **Major Concerns**

The objective of the Convention is to regulate levels of greenhouse gas concentration in the atmosphere so as to avoid the occurrence of climate change that would impede sustainable economic development or compromise initiatives in food production.

### **National Measures for Implementation**

Bangladesh has already gathered and analysed a vast amount of information pertinent to climate change, policy-wise, both internally and domestically. The country is in process of preparation of a National Climate Change Action Plan.

The country study on climate change undertaken under the US Country Studies Program has resulted in a substantial volume of updated information, data and insight into both the greenhouse gas emissions and their possible mitigation, as well as the vulnerabilities to climate change and sea-level rise together with possible adaptation strategies. Mitigation options have also been prepared for submission to the Global Environment Facility (GEF) and other donor agencies including International and Regional Banking Institutions.

**13. UNITED NATIONS CONVENTION TO COMBAT DESERTIFICATION IN THOSE COUNTRIES EXPERIENCING SERIOUS DROUGHT AND OR DESERTIFICATION, PARTICULARLY IN AFRICA (1994)**

**Major Concerns**

To combat desertification and mitigate the effect of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels and supported by international cooperation and partnership arrangements.

**National Measures for Implementation**

Although Bangladesh is not in danger of desertification it is becoming increasingly more affected by droughts. This is partly because the increase in population has led to the overuse of land and water resources, and partly because of development efforts along narrow sectoral lines. Agenda 21 calls for managing fragile ecosystems by combating the growing desertification and drought. The western part of Bangladesh has greater variability of rainfall and is more susceptible to drought than the eastern part. The reduction in the flow of the Ganges River during the dry months has seriously compounded the drought preparedness in both the short and long term. The government has signed the Convention on Desertification and takes an active part in expert level meetings on the issues raised therein.

**14. RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT AND AGENDA 21 (1992)**

**Major concerns**

To establish a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people and working towards international agreements, which respect the interests of all and protect the integrity of the global environmental and developmental system.

The Earth summit was a watershed event, which affected the approach to issues throughout the world. An agreed text on all major issues of global concern, known as Agenda 21, was issued at the conference. This vast set of integrated strategies and detailed identified number of issues for conservation and management of for development. This is the core of the global environmental. To achieve success in the identified issues, it called for strengthening role of major groups, such as women, youth, indigenous, people, local trade unions, scientific and technological community and so on. Since the Earth Summit all environmental action, on a national, regional or global basis, is taken in Bangladesh on the basis of Agenda 21 and the conventions which were signed at the Earth Summit.

Agenda 21 also pointed out that health and development are intimately interconnected. In discussing the social and economic dimensions, Agenda 21 mentions the great



importance of combating poverty as a means of ensuring the conservation and sustainable utilisation of resources. It says, quite bluntly, that “a specific anti-poverty strategy is therefore one of the basic conditions for ensuring sustainable development”. This antipoverty strategy was strongly endorsed by both the government and the NGOs of Bangladesh.

All other dimensions concern demographic dynamics and their effect on sustainable development. UNCED called for disseminating knowledge concerning the links between demographic trends and factors and sustainable development and also for formulating and then implementing integrated environment and development programs, taking into account demographic trends and factors. In Bangladesh there is ample awareness of the effect of demographics and both the government and NGOs are actively promoting family planning.

### **National Measures for Implementation**

Bangladesh’s government and NGOs are quite aware that sound development is not possible without a healthy population. In the four years since the NCS was first drafted, the rapid growth of the Dhaka metropolitan area into a “mega city”, with 10 million people by the year 2000 is causing serious concern. Agenda 21 calls for various measures for improving the urban and rural habitat. This is a development area of such vast dimension that only a modest beginning has been made in Bangladesh. Although recently the Dhaka Metropolitan Development Plan has been completed, so far only a modest beginning has been made in implementing it.

Agenda 21 also discusses the necessity of integrating the issues of environment and development in decision-making. The Fifth Five Year Plan has a chapter on environmental issues, which would have to be taken into account when implementing economic development. In 1992, the Government issued the Environment Policy and Action Plan, which has guided further policy action and project planning.

Since then the Ministry of Environment and Forest has entered into an agreement with IUCN for an environmental economist to work in the Planning Commission on integrating issues of environment and development. It has been the practice for development plans to be made without reference to environmental issues and therefore it has felt that such issues should be integrated within the documents defining the development process. It was also felt that the provision of an effective legal and regulatory framework is urgently needed to strengthen the process by which development would be made environmentally sustainable. To this end the Government passed the Environment Protection Act (EPA) in 1995. The ECA is a broad piece of legislation greatly empowering the DOE. However, to make its provisions capable of implementation, a number of specific laws would have to be formulated.

## **15. THE FOREST PRINCIPLES (1992)**

The aim of the Forest Principle is to contribute to the management, conservation and sustainable development of forests and to provide for their multiple and complementary functions and uses.

#### **National Measures for Implementation**

The Forest Policy 1994 was announced in 1995 and the Forest Master Plan, was announced in early 1996. This Plan supports all the initiatives urged in Agenda 21. Specifically the Wildlife Division in the Forest Department has been revived. In addition there has been institutionally strengthening measures, such as the successful implementation of a coastal program and various projects for special afforestation are being encouraged. Parallel to this effort, UNDP/FAO study in Integrated Forest Management has also been published in 1995.

### **16. WASHINGTON DECLARATION ON PROTECTION OF THE MARINE ENVIRONMENT FROM LAND-BASED ACTIVITIES (1995)**

#### **Major Concerns:**

To protect and preserve the marine environment for present and future generations, and to involve major groups in national, regional and international activities to degradation of the marine environment by land-based activities.

#### **National Measures for Implementation:**

The marine environment is an essential component of the global life support and is a positive asset. Bangladesh is fortunate to have present opportunities for sustainability, such as the long coastline which can open to the oceans. The NCS has discussed the marine environment, and in particular the areas in some detail. It was realised that the coastal ecosystem of Bangladesh is very productive and that the marine environment would offer further opportunities for sustainable economic development. Agenda 21 fully supports the viewpoint expressed in the NCS. It calls for integrated management and sustainable development of coastal areas including the EEZ.

#### **South Asian Regional Seas Action Plan**

For the purposes of this Action Plan, the South Asian Seas Region covers and the related coastal environment, including international waters adjacent to the States: Bangladesh; India; Maldives; Pakistan and; Sri Lanka.

#### **Existing Legislative Arrangements**

The Bangladesh Environment Conservation Act 1995 does not provide for any action related to implementation of environment Conventions, Treaties and Protocols signed and ratified by Bangladesh, although specific mentions have been made in the Bangladesh Environment Policy, 1992 and Action Program. However, the existing

legislative arrangements vis-a-vis the above Conventions, Treaties and Protocols can be summarised in the following table:

Group of ICTP's	Legislation
Group (a)	Destructive Insects and Pests Act, 1914; The Poisons Act, 19 Imports and Export Control Act. 1950; The Dangerous Cargoes Act 1953; the Factories Act, 1965; The Customs Act, 1969; The Agricultural Pesticides Ordinance. 1971; Bangladesh Petroleum, 1974; the Drugs (control) Ordinance 1982: etc.
Group (b)	The Forest Act, 1972: The Protection and Conservation of Fish Act, 1950; The Government Fisheries Protection) Act, 1959; The Agricultural Pesticides Ordinance, 1971: The Bangladesh Wildlife (Preservation) Order, 1973; The Seeds Ordinance, 1977; The Marine Fisheries Ordinance, 1983, etc.
Group (c)	The Highways Act. 1952: The Vehicles Act, 1927; The Factories Act 1965: The Petroleum Act, 1974: The Motor Vehicle Ordinance, 1983; etc.

The existing legislative arrangements are undoubtedly below adequate. The environmental ICTP's in consideration require the designation of at least one, if not several, focal points for each. Essentially what is required is; the setting up of depository and repository in each focal points: constituting implementation and monitoring cells with adequate manpower, equipment and financial implementation and monitoring cells with adequate manpower, equipment and financial resources and, above all, provisions for follow-up activities in respect of the respective requirements through updating the existing legislation. In cases where the existing legislation can not be made to sufficiently cover our international obligations, new legislation should be made in place.

## APPENDIX A

### LIST OF ABBREVIATIONS

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<b>ACRONYM</b>	<b>MEANING</b>
<b>ADB</b>	<i>Asian Development Bank</i>
<b>AOSIS</b>	<i>Alliance of Small Island States</i>
<b>BELA</b>	<i>Bangladesh Environmental Lawyers Association</i>
<b>BEMP</b>	<i>Bangladesh Environment Management Project</i>
<b>BFDC</b>	<i>Bangladesh Forest Industries Development Corporation</i>
<b>BFRI</b>	<i>Bangladesh Forest Research Institute</i>
<b>BNCS</b>	<i>Bangladesh National Conservation Strategy</i>
<b>CBD</b>	<i>Convention on Biological Diversity</i>
<b>CCF</b>	<i>Chief Conservator of Forests</i>
<b>CITES</b>	<i>Convention on International Trade in Endangered Species</i>
<b>DFO</b>	<i>Divisional Forest Officer</i>
<b>DG</b>	<i>Director General</i>
<b>DOE</b>	<i>Department of Environment</i>
<b>DUTP</b>	<i>Dhaka Urban Transport Project</i>
<b>ECA</b>	<i>Environmental Conservation Act</i>
<b>ECR</b>	<i>Environmental Conservation Rules</i>
<b>EIA</b>	<i>Environmental Impact Assessment</i>
<b>EIS</b>	<i>Environmental Impact Statement</i>
<b>EPA</b>	<i>Environmental Protection Agency</i>
<b>ESCAP</b>	<i>Economic and Social Commission for Asia and the Pacific</i>
<b>FAO</b>	<i>Food and Agriculture Organisation</i>
<b>FNCCC</b>	<i>Framework Convention on Climate Change</i>
<b>FD</b>	<i>Forest Department</i>
<b>GC</b>	<i>Governing Council</i>
<b>ICTP</b>	<i>International Conventions, Treaties and Protocols</i>
<b>ICLEI</b>	<i>International Council of Local Environmental Initiatives</i>

<b>ICUN</b>	<i>International Conservation Union for Nature</i>
<b>IEE</b>	<i>Initial Environmental Examination</i>
<b>IFESCU</b>	<i>Institute of Forestry and Environmental Sciences</i>
<b>LDC</b>	<i>Least Developed Country</i>
<b>MEA</b>	<i>Multilateral Environmental Agreement</i>
<b>MLGRDC</b>	<i>Ministry of Local Government, Rural Development and Cooperatives</i>
<b>MOEF</b>	<i>Ministry of Environment and Forest</i>
<b>NEC</b>	<i>National Environmental Commission</i>
<b>NEMAP</b>	<i>National Environment Management Action Plan</i>
<b>NES</b>	<i>National Environmental Assessment</i>
<b>NGO</b>	<i>Non-Governmental Organisation</i>
<b>NORAD</b>	<i>Norwegian Agency for Development Co-Operation</i>
<b>NPC</b>	<i>National Planning Commission</i>
<b>NRP</b>	<i>Natural Regeneration Plot</i>
<b>PEPA</b>	<i>Pakistan Environmental Protection Agency</i>
<b>PEPC</b>	<i>Pakistan Environmental Protection Council</i>
<b>PIL</b>	<i>Public Interest Litigation</i>
<b>PPHE</b>	<i>Department of Public Health and Engineering</i>
<b>ROAP</b>	<i>Regional Office for Asia and the Pacific</i>
<b>SAARC</b>	<i>South Asian Association for Regional Cooperation</i>
<b>SACEP</b>	<i>South Asia Cooperative Environment Programme</i>
<b>SAFP</b>	<i>Subject Area Focal Points</i>
<b>SAPTA</b>	<i>SAARC Agreement on Preferential Trading Arrangements</i>
<b>SEMP</b>	<i>Sustainable Environment Management Project</i>
<b>SFSR</b>	<i>SAARC Food Security Reserve</i>
<b>SIDA</b>	<i>Sindh Irrigation and Drainage Authority</i>
<b>SMRC</b>	<i>SAARC Meteorological Research Centre</i>
<b>TCO</b>	<i>Technical Committee on Environment</i>
<b>TOAB</b>	<i>Tour Operators Association of Bangladesh</i>
<b>UNCED</b>	<i>United Nations Conference on Environment and Development</i>
<b>UNCEP</b>	<i>United Nations Conference on Environment and Development</i>

<b>UNDP</b>	<i>United Nations Development Programme</i>
<b>UNEP</b>	<i>United Nations Environment Program(me)</i>
<b>URBAIR</b>	<i>Urban Air Quality Management Strategy</i>
<b>USF</b>	<i>Unclosed State Forest</i>