

**ENVIRONMENTAL  
LEGISLATION  
AND  
INSTITUTIONS  
IN  
BHUTAN**

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

**FOR**

**SOUTH ASIA COOPERATION FOR  
ENVIRONMENT PROGRAMME (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. Maqbool Elahi, Director, SACEP; Mr Prasnatha Dias Abeyegunawardene, Deputy Director, SACEP; and Mr. Nirmal Andrews, Director, ROAP/UNEP, Bangkok, are

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## **CHAPTER I**

### **EXECUTIVE SUMMARY**

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#### **1. INTRODUCTION**

In Bhutan, His Majesty, King Jigme Singye Wangchuck, has continued to ensure that the processes of economic development and environmental and cultural integrity are not mutually exclusive, but critical to the long-term viability of Bhutanese development. As summarised by His Majesty himself, "Gross National Happiness is more important than Gross National Product." This has been the principle guiding force of Bhutan's sustainable development strategy. Recurrent in examination of environmental issues in Bhutan are discussions of the strong religious and spiritual bonds the people feel with their environment, and their subsequent obligation to ensure its protection.

Sustainable development in the Kingdom has therefore come to mean the capacity and political will to effectively address current development and environmental problems and future challenges, without compromising the Kingdom's unique cultural integrity and historical heritage or the quality of life of future generations of Bhutanese people. They aspire to achieve this by following the "Middle Path," the balance between economic development and environmental conservation.

In common with the smaller south Asian countries, the Maldives and Nepal, but in contrast to the larger countries, Bangladesh, India, Pakistan and Sri Lanka, there is no chapter in this Handbook addressing the role of the judiciary. In Bhutan, the judiciary has not taken an activist role in environmental management.

#### **2. ENVIRONMENTAL INSTITUTIONS**

The major environmental institution in Nepal is the National Environmental Committee (NEC). The NEC is a high-level, cross-sectoral body made up of Ministers and officials from various sectors to create policy, to regulate, and to be responsible for meeting the Royal Government's obligations under global environmental conventions. Additionally, the NEC Secretariat (NECS) plays a key role in promoting sound environmental policies and investments. The Secretariat is responsible for ensuring that Bhutan follows an environmentally sustainable development path and that all projects take into consideration environmental aspects.

A National Environment Committee was established in 1989 as part of the Planning Commission under the Royal Command of His Majesty the King. The National Environment Secretariat (NECS) was de-linked from the Planning Commission and upgraded to an independent organisation functioning as the National Environment Commission (NEC) in 1992.

The NEC is in the process of setting a consolidated, strategic, multi-sectoral framework for the environment. The institutional mechanism for coordinating conservation activities, monitoring, reporting on status and impacts has yet to be put in place. The first step towards this was the preparation of the National Environment Strategy (NES).

### **3. ENVIRONMENTAL LEGISLATION**

The majority of Bhutan's existing environmental legislation concerns the conservation of forests and the protection of wildlife and their habitats. More recent legislation covers the industrial and mining sectors and environmental assessment. The next set of environmental laws in Bhutan will have to be built upon the framework of current laws such as the Forest Act 1969, Forest and Nature Conservation Act 1995, Mines and Management Act 1995 and the Environmental Assessment Act 2000. In addition, umbrella legislation is needed to facilitate implementation of a holistic approach to environmental issues. The Royal Government has thus initiated such a law – the National Environmental Protection Act – and development is currently under way. Policies have been refocused to better integrate fragmented sectoral laws and regulations into a coherent framework, streamlining and harmonizing regulatory requirements.

### **4. ENVIRONMENTAL POLICY**

One of the responsibilities of the NECS is to draw up a National Environmental Strategy (NES) to ensure that environmental concerns are an integral part of the development agenda. The ultimate goal of the strategy is to guide developmental processes so that impacts on the natural environment are minimised or mitigated.

The NES for Bhutan outlines three main avenues of sustainable economic development:

- expanding hydropower;
- increasing agricultural self-sufficiency; and
- expanding the industrial base.

The NES examines each avenue in detail, taking into consideration the current status of each sector, enabling conditions for development, and the implications of such development. The NES is only the first step in the process towards sustainable development. The next step will be the implementation of the strategy, which will be conducted through the Danida-supported Environment Sector Programme Support (ESPS). The National Environmental Strategy provides the guiding framework for all activities and programs of the NECS.

## CHAPTER II

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

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### Map of Bhutan

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### Key Environmental Issues

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Insufficient Human Resources; Insufficient to Implement Comprehensive Environmental Strategy; Limited Area for Agriculture; High Fuel wood Consumption; Emerging Urban Development Problems; Environmental Education; Poverty alleviation; Coastal Pollution

### Environmental Policies

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Paro Resolution on Environment and Sustainable Development, 1990; National Environmental Strategy;

### Legislation Related to Environment

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National Mines and Management Act 1995 and the Environmental Assessment Act 2000, Forest and Nature Conservation Act 1995; Mining Act (1995); Paro

## List of Issues, Institutions, Legislation and MEAs

Resolution on Environment and Sustainable Development (1990); Plant and Quarantine Act and regulations (1988); ; Plant and Quarantine Act and regulations (1988); Wildlife Act (1985); Environmental Strategy; Inheritance law (1979); Livestock Law (1979); Land Law (1979); Pastureland Law (1979); National Forest Policy, 1974; Forest Act 1969, National Forest Act (1969);

### **Environmental Institutions**

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National Environment Committee; Planning Commission; National Environment Commission; Ministry of Rural Development; Ministry of Rural Development

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

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- UN framework convention on climate change; instrument of ratification signed on 25 August 1992
- UN convention on Biological Diversity; instrument of ratification signed – 25 August 1995
- Convention on The Conservation of Migratory Species of Wild Animals (1979)
- Vienna Convention for the Protection of The Ozone Layer (1985)
- Montreal Protocol on Substances That Deplete The Ozone Layer (1987)
- Basel Convention on The Control of Transboundary Movements Of Hazardous Wastes And Their Disposal (1989)
- United Nations (1992) Framework Convention on Climate Change (1992).
- Stockholm Declaration of the United Nations Conference on the Human Environment (1972)
- Washington Declaration on Protection of the Marine Environment From Land-Based Activities (1995)
- The Final Act and the Law of Sea Conventions signed on 10th December 1982.



## CHAPTER III

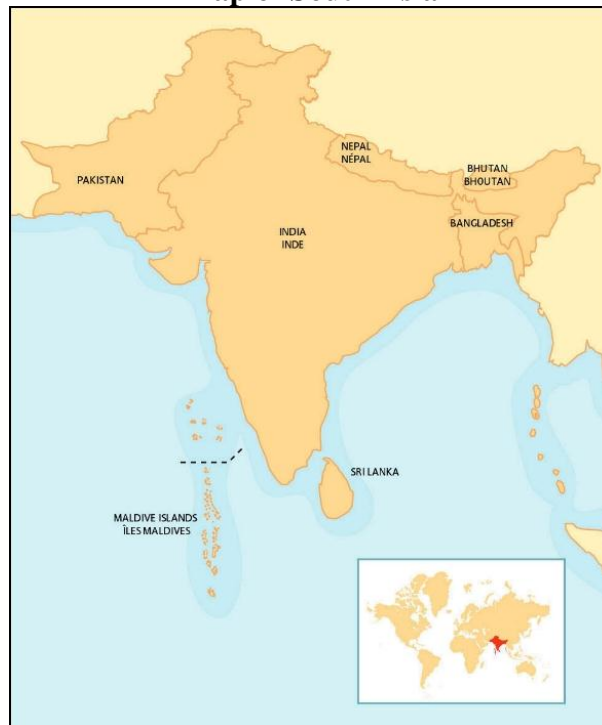
### REGIONAL OVERVIEW

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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.

### Example Box 1: Environment Ministries in South Asia

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

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

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

The Environment Ministries established in many South Asian countries including India, Sri Lanka and Pakistan, are responsible for implementing the frameworks for environmental laws and for formulating environmental policies. In addition, this far-reaching scope of responsibility extends to overseeing the work of other ministries, departments and agencies relating to the environment. In the Maldives, for example, the

Ministry of Environment is responsible for formulating rules and regulations regarding the environment in areas that do not have a designated government authority to carry out such functions.

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

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

### **Example Box 2: Public Planning in South Asia**

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

**India** has well evolved institutes at central, state, district and local levels and has established a National Environmental Council headed by the Prime 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.

### Example Box 3: Constitution of Sri Lanka

*Chapter VI, Article 28*

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

(a) - (c) ...

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

(e) ...

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

## 5. ENVIRONMENTAL LEGISLATION

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

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

Resource conservation legislation in the region incorporates a wide range of environmental management concerns, including water resources protection and conservation, forest laws, marine resources management, land use management, preservation of natural habitats and conservation of heritage. Most countries in the region have enacted laws specific to these issues and introduced innovations to make their enforcement more effective. However, existing defects in legislation make the



administration of conflicting demands on resources difficult to manage. In the countries of South Asia, the management of forests and forest resources has been given considerable priority.

#### **Example Box 4: Forest Management in South Asia**

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

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

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

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

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

## 6. ENFORCEMENT OF ENVIRONMENTAL LEGISLATION

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

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

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

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

Consent, the Precautionary Principle, the Polluter Pays Principle, and the concept of Permanent Sovereignty over National Resources.

## 7. ENVIRONMENTAL IMPACT ASSESSMENT

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

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

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

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

### **Example Box 5: Environmental Impact Assessment**

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

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

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

The critical issues for EIA development in the South Asia region are consistency in application, which can only be obtained through centralised management, decentralised implementation and access to independent expertise. The EIA process must continue to focus on greater public participation in the process and improved access to information in order to make any such public involvement meaningful. Although incredible progress has been made in the development of an EIA legislative network in the countries of the region, the actual implementation of these provisions nevertheless remains problematic. In order to prevent circumvention of the crucial premise of the legislation, EIA procedures must not be regarded merely as obstructions to the goals of development.

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

The present judicial systems in India, Pakistan, Sri Lanka and Bangladesh represent an evolution from the traditional institutions established during the colonial period. The conventional role of the judiciary, being that of dispute resolution (civil jurisdiction) and

the trial and punishment of those charged and convicted of crimes (criminal jurisdiction), has evolved over a considerable period of time. The basic elements of a modern system of civil and criminal justice have been in operation in much of the sub-continent for more than a century and in Nepal at least since 1951, when the Interim Constitution was promulgated.

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

Connections and linkages between different forms of activity and their environmental consequences are subject to different interpretations and reflect the inherent complexity of these issues. Therefore the judiciary is called upon to resolve such issues without compromising the fundamental goals and rights of civil society. The structure of judicial institutions in different countries in South Asia has not been satisfactorily modified to provide for the requirements necessary to achieving sustainable development. In many countries the Supreme Courts have taken the lead in interpreting laws and giving directions, many of which have had a far-reaching impact on environmental management. The Supreme Court in India, for example, in recognising the role of environmental protection for the achievement of sustainable development and growth, has been establishing mechanisms for the institutionalisation of judicial direction in environmental matters. The Court has adopted and set procedures that become the guiding law for the subordinate courts in the country. The most important innovation has been the Public Interest Litigation that enables individuals and organisations to file a writ petition with the objective of protecting environmental resources and benefiting the affected people. The Supreme Court of India has also established specialised High Court benches known as "Green Benches" to deal specifically with environmental management issues. Similarly, in Pakistan the superior courts exercise jurisdiction conferred under Articles 184(3) and 199 of the Constitution. Nepal's 1997 Environmental Protection Act continues with this trend of judicial regulation by providing for the designation of a Prescribed Authority to administer the filing of environmental cases. However, appropriate rules for designating such an authority have not yet been formulated and environmental cases continue to be brought before subordinate courts.

An active judiciary has the potential to ingrain the rights of people to enjoy a certain level of environmental protection and to seek judicial intervention where these are violated.

The judiciary may also act as a check on government policies that disrupt fragile ecological balances and generate awareness and consciousness amongst policy makers through court verdicts and orders. However, there is a need for specialist environment courts that can facilitate more consistent and expeditious environmental decision-making. These courts would reduce the number of cases brought before the Supreme Courts and High Courts and, as a single combined jurisdiction would be less expensive than a network of separate tribunals, administrative costs would also be limited.

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

Courts have applied the public trust doctrine in regard to the management of natural resources and the environment, and in some states have given consideration to the concept of inter-generational and intra-generational equity. In this respect the administration of environmental issues and litigious matters is approached with firm consideration for maintaining the environment for future generations. In the 1988 Supreme Court of **India** decision of *Rural Litigation and Entitlement 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>							
ITEMS	BANGLADESH	BHUTAN	INDIA	MALDIVES	NEPAL	PAKISTAN	SRI LANKA
<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. GEOGRAPHICAL

<b>Location:</b>	Between India and China.
<b>Geographic coordinates:</b>	27° 30' N, 90° 30' E
<b>Area:</b>	46500 square kilometres
<b>Population:</b>	698,950 approx.
<b>Population growth:</b>	3.1 percent
<b>GNP per capita:</b>	US\$ 545
<b>Land-use:</b>	<i>Forests:</i> 72.5% <i>Cultivated Areas:</i> 7.7%
<b>Number of protected areas:</b>	9
<b>Percent total land protected:</b>	26.23%
<b>Total protected area:</b>	10,513 square kilometres
<b>Economic Activity as % of GDP:</b>	
<i>Agriculture:</i>	38.2%
<i>Industry:</i>	29.5%
<i>Community and Social Services:</i>	10.9%

Bhutan is located between two biogeographical realms: the Palearctic realm of the temperate Euro-Asia and the Indo-Malayan realm of the Indian sub-continent. As a result of this location, Bhutan hosts a large number of endemic species and very rich biodiversity. The biomes in Bhutan stretch from sub-tropical in the south (150m ASL) through temperate in the central interior, to an alpine zone in the north (7000m+ASL). Animals such as the tiger, elephant, one-horned rhinoceros, Asiatic water buffalo, pygmy hog and the rare golden langur exist in the lush tropical forests of the South. The snow leopard, blue sheep, and takin are found in the cool forests and alpine meadows of the North. Over 165 species of mammal and more than 770 species of bird have been identified (despite the very limited data inventories that have been conducted in these fields).

Within Bhutan's borders, one can find over 60 percent of the endemic species of the Eastern Himalayan region. In addition, Bhutan's rich flora includes over 50 species of Rhododendron, and over 300 species of medicinal plants, mostly alpine, that are used in traditional herbal medicine. As a result, Bhutan has been declared as one of ten global "hot-spots" for the conservation of biological diversity. Many ecologists believe that Bhutan represents the last best chance for conservation in the Eastern Himalayas, a region

considered of critical importance to the global efforts to conserve biological diversity. Few countries can match Bhutan's biological diversity, and even fewer have taken such strong steps to ensure the conservation of their biodiversity.

## **1. POPULATION**

The population of Bhutan is about 600,000. Bhutan has the lowest population density in the region, however, one of the greatest challenges that confront the nation is the rapid rate of population growth – 3.1 percent – which stands as one of the highest in the sub-region. If the current rate of growth remains unchecked, the kingdom's population will double in 23 years.

## **2. ENVIRONMENTAL AND DEVELOPMENT ISSUES**

The preservation of Bhutan's rich biological diversity can be attributed to the enlightened leadership and the strong conservation ethic of the Bhutanese people. Conservation is a central tenet of Buddhism. Buddhism believes in preserving nature and giving back to the earth what one has taken. Buddhism also believes in the sanctity of life. The importance of protecting nature in all its manifestations has permeated our consciousness and has become integral to the Bhutanese way of life. The pre-Buddhist "Bon" (animism) beliefs that forests, mountains, lakes, rivers and the sky are the domain of spirits, and desecrating them will lead to disease and suffering, are very strong. Therefore, the preservation of the environment and of sacred and cultural heritage sites is an integral part of the Bhutanese value system.

There are vibrant customary rules and norms, especially regulating the use of community grazing land, irrigation channels, forests, breeding stock, foot paths, shrines, bridges, etc. These are held in community ownership and use. Sophisticated institutional arrangements have evolved to equitably and efficiently regulate their use. The Bhutanese culture is thereby based on the customary rules, norms, indigenous knowledge systems and institutions

His Majesty, King Jigme Singye Wangchuck has continued to ensure that the processes of economic development and environmental and cultural integrity are not mutually exclusive, but critical to the long-term viability of Bhutanese development. As summarised by His Majesty himself, "Gross National Happiness is more important than Gross National Product." This has been the principle guiding force of Bhutan's sustainable development strategy.

As a result of the enlightened leadership and the strong tradition of environmental conservation and preservation, Bhutan now has over 26% of its land area under protected area management and over 72.5% of the country under forest cover. While many parts of the world have suffered from alarming deforestation rates, the forest cover in Bhutan has

actually increased in the last decade. The 73rd session of the National Assembly in 1995 mandated that the country must at all times keep 60% of the country under forest cover.

The enlightened conservation ethic and an innate understanding of terms such as sustainability and ecological succession and carrying capacity were practiced in Bhutan, although, these terms were not quantified. It was understood that resources were finite, had to be used in balance and that excessive use would deplete the natural base and threaten the whole ecosystem. In this harsh mountain environment, these views were communicated through stories and beliefs that the spirits, Gods and Goddesses would destroy violators of the natural order. All the sacred forests, sacred lakes and watershed areas can be translated today to important conservation sites. These values ensured that at the start of its economic development process in 1961, Bhutan inherited an almost intact natural environment. Forests, atmosphere, land, water were in pristine conditions with the local people putting minimal pressure on the resource base.

### 3. ENVIRONMENTAL CHALLENGES

Bhutan's isolated location and late start in development, as well as its conservation ethic has shielded the country from many of the detrimental side effects of poorly planned or haphazard development. As a result, while most of the Himalayan region has seen its natural resource base severely compromised through deforestation, soil degradation, erosion, and pollution, Bhutan's natural patrimony of extensive and varied forests, limited yet fertile and productive farmland, and pristine water and air remains largely intact.

Although the present generation of Bhutanese cannot take credit for centuries old methods of resource utilisation which have enabled them to inherit an intact natural resource base, they *can* take credit for ensuring the continuation of this legacy. The Royal Government has established institutions, begun programs and projects, and ratified international conventions towards the aim of preserving and conserving the natural environment. The government has prioritised the environment as a key sector and has charted out a sustainable development path. The key will be to follow this path amidst the many challenges ahead.

During the second half of the twentieth century, Bhutan became an active participant of social and economic development. They have made vast improvements in the quality of life that results from breakthroughs and improvements in medicine and technology. However, threats that come from inappropriate or uncoordinated development are starting to manifest themselves in the country. Threats to the continued integrity of Bhutan's natural resource base are increasingly being felt from a variety of "developmental" sources:

- infrastructure construction;
- industrial expansion;
- increasing urbanization;

- growth of foreign tourism;
- compromising land-use management practices;
- high population growth rate;
- employment shifts;
- changing consumption patterns; and
- Technological innovations.

#### **4. LEGAL FRAMEWORK**

Forest Act 1969, Forest and Nature Conservation Act 1995, Mines and Management Act 1995 and the Environmental Assessment Act 2000 National Environmental Strategy; Paro Resolution on Environment and Sustainable Development (1990); National Forest Policy, 1974; National Forest Act (1969); Land Law (1979); Pastureland Law (1979); Inheritance law (1979); Livestock Law (1979); Wildlife Act (1985); Plant and Quarantine Act and regulations (1988); Mining Act (1995);

## CHAPTER V

# OVERVIEW OF CONSTITUTIONAL, LEGISLATIVE AND INSTITUTIONAL FRAMEWORK

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

**Key Legislation:** Forest Act 1969, Forest and Nature Conservation Act 1995, Mines and Management Act 1995 and the Environmental Assessment Act 2000 National Environmental Strategy; Paro Resolution on Environment and Sustainable Development (1990); National Forest Policy, 1974; National Forest Act (1969); Land Law (1979); Pastureland Law (1979); Inheritance law (1979); Livestock Law (1979); Wildlife Act (1985); Plant and Quarantine Act and regulations (1988); Mining Act (1995);

**Key Institutions:** National Environment Committee; Planning Commission; National Environment Commission; Ministry of Rural Development; Ministry of Rural Development

### 1. INTRODUCTION

Bhutan has two fundamental sources of law: His Majesty the King, and the National Assembly. Both sources act mutually to reinforcement one another. The King sits in the National Assembly and thus contributes directly to laws and its issues. In order to pass an Act, law, etc., the National Assembly calls for a point to be submitted from the relevant agencies. However, before being submitted to the National Assembly, a prior approval from the cabinet is necessary.

The National Assembly is made up of 150 members or representatives. The membership is divided into three categories: 105 elected representatives of the people including one representative of the business community; 12 representatives of the monks' community and 33 senior civil servants.

The Cabinet is represented by the Council of Ministers and is headed by the Chairman. The head of the government is normally elected as the Chairman of the Cabinet.



## 2. LEGISLATION

Some policies, administrative and legal instruments relating to the environment in Bhutan are:

### Resolutions

- Paro Resolution on Environment and Sustainable Development (1990)
- Resolutions of the National Assembly relating to the environment (various years)

### Laws and Acts

- National Forest Act (1969)
- Land Law (1979)
- Pastureland Law (1979)
- Inheritance law (1979)
- Livestock Law (1979)
- Wildlife Act (1985)
- Plant and Quarantine Act and regulations (1988)
- Mining Act (1995)
- Forest and Nature Conservation Act (1995)

Development of law at the national level with relation to environment protection and its conservation has led to legislation on environmental and environment-related issues by adding regulatory instruments with well-defined requirements. Policies also have been refocused to better integrate fragmented sectoral laws and regulations into a coherent framework, streamlining and harmonizing regulatory requirements.

The Program for further implementation of Agenda 21 established the target year of 2002 for all countries to have formulated national sustainable development strategies. Bhutan's national strategy, the National Environment Strategy, has already been in place for four years now, making the Kingdom one of the 85 countries globally to have completed such a sustainable development strategy.

Bhutan has used a combination of the sustainable development strategy and five-year development sector plans. These sectoral plans have facilitated the Government in receiving financial resources for helping decision-makers to achieve and measure progress toward sustainable development goals and targets. The National Environment Commission (NEC) is the national coordinator of the country's sustainable development strategy; its long-term objective is to define policies, programs, plans and actions for promoting and ensuring the sustainability of Bhutan's natural resources. The NEC provides input into major policy areas in which environmental concerns and economic development need to be balanced, such as tourism; road access; resource-based mechanisms for financing sustainability; public health; urbanisation; and population and sustainability.

## Overview of Constitutional, Legislative and Institutional Framework

A prerequisite for creating environmental legislation is the establishment of environmental standards. Such standards have never been systematically developed for Bhutan, which has often led to the adoption of regional and international standards instead. Environmental legislation eventually will be developed for all sectors based on environmental quality standards determined by the National Environment Commission and sectoral Ministries.

The majority of Bhutan's existing environmental legislation concerns the conservation of forests and the protection of wildlife and their habitats. More recent legislation covers the industrial and mining sectors and environmental assessment, as has been mentioned. The next set of environmental laws in Bhutan will have to be built upon the framework of current laws such as the Forest Act 1969, Forest and Nature Conservation Act 1995, Mines and Management Act 1995 and the Environmental Assessment Act 2000. In addition, umbrella legislation is needed to facilitate implementation of a holistic approach to environmental issues. The Royal Government has thus initiated the development of such a law, the National Environmental Protection Act, which is currently under way.

## INSTITUTIONAL FRAMEWORK

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

**Key Institutions:** National Environment Committee; Planning Commission; National Environment Commission; Ministry of Rural Development; Ministry of Rural Development

### 1. INTRODUCTION

A National Environment Committee was established in 1989 as part of the Planning Commission under the Royal Command of His Majesty the King with technical and financial support from Danida. In recognition of the priority accorded to environmental issues and the judicious use of natural resources, the Environment Secretariat was de-linked from the Planning Commission. The Secretariat was upgraded to an independent organization functioning as the National Environment Secretariat under the guidance of the National Environment Commission (NEC) with effect 30 September 1992.

The National Environment Commission is a national policymaking body and regulatory agency commissioned to preserve and sustain the country's natural resources. The Commission is a high level, cross-sectoral body of ministers and officials from various sectors.

#### **Mandate of the National Environment Commission**

- To serve as an advisor to the Royal Government on all environmental issues;
- To institutionalise Environmental Assessment processes and guidelines;
- To monitor the impact of development on the environment;
- To be responsible for keeping the National Assembly informed on specific environmental issues;
- To be responsible for meeting the Royal Government's obligations to global environmental conventions;
- To ensure that the use of natural resources in Bhutan is sustainable;
- To ensure that biological diversity and essential ecological processes and life support systems are maintained and the awareness thereof increased;
- To promote environmental awareness in all segments of Bhutanese society through various means;

- To ensure that adequate pollution abatement techniques and environmental management systems are put in place to mitigate the negative impacts of development and industrialisation;
- To encourage and promote the use of cleaner and more appropriate technologies for existing and upcoming industries in order to minimise pollution and other adverse effects;
- To play a lead role in environmental sector co-ordination at the national level; and
- To ensure the implementation of policies, legislation, and instruments for environmental conservation.

## **2. National Environmental Commission Secretariat (NECS)**

The mandate of the National Environment Commission is implemented through the National Environment Commission Secretariat (NECS), which works in close collaboration with line ministries, Dzongkhag Yargay Tshogchungs (district development), and Geog Yargay Tshogchungs (sub-district development). The NECS plays a key role in promoting sound environmental policies.

The NECS plays a key role in promoting sound environmental policies and investments. The Secretariat is responsible for ensuring that Bhutan follows an environmentally sustainable development path and that all projects take into consideration environmental aspects.

The Secretariat is, however, still in the stages of development and requires significant institutional strengthening, including training of staff, and specific support for environmental legislation in order to carry out its mandate effectively. The vision for the NEC and its Secretariat is to develop further into a functioning and effective institution with the competence and position to ensure that Bhutan's economic development proceeds at an environmentally sustainable pace. Towards this end, support for the NEC Secretariat and environmental legislation has been included as one of the components of the Danish-Bhutanese Environment Sector Programme Support.

A Deputy Minister heads the National Environment Secretariat. The NEC Secretariat is divided into various divisions to look after different sectors. The various divisions are:

- Administration and Finance Division
- Planning and Policy division
- RNR division
- Environment Impact Assessment Division
- Communication Division

## CHAPTER VI

### NATIONAL ENVIRONMENT GOVERNANCE

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**Key Issues:** Insufficient Human Resources; Insufficient to Implement Comprehensive Environmental Strategy; Limited Area for Agriculture; High Fuel wood Consumption; Emerging Urban Development Problems; Sustainable Livelihood; Land Degradation; Water Pollution; Forest Management; Loss of Biodiversity; Education and awareness

**Policy Framework:** Paro Resolution on Environment and Sustainable Development, 1990; National Environmental Strategy; National Environmental Action Plan;

**Key Legislation:** Forest Act 1969, Forest and Nature Conservation Act 1995, Mines and Management Act 1995 and the Environmental Assessment Act 2000 National Environmental Strategy; National Forest Policy, 1974; National Forest Act (1969); Land Law (1979); Pastureland Law (1979); Inheritance law (1979); Livestock Law (1979); Wildlife Act (1985); Plant and Quarantine Act and regulations (1988); Mining Act (1995);

**Key Institutions:** National Environment Committee; Planning Commission; National Environment Commission; Ministry of Rural Development; Ministry of Rural Development; Department of Environment Conservation; Royal Society for the Protection of nature; Trust Fund board

#### 1. INTRODUCTION

The Paro Resolution on Environment and Sustainable Development of 1990 represents a significant landmark in Bhutan's ongoing efforts to conserve its magnificent natural environment while improving the quality of life of its citizens. The resolution expresses eloquently the collective concerns of the Bhutanese people the possible threats to the environment, and lays down a guiding philosophy for the future to avoid such threats. The attachments to the resolution include specific recommendations for policies and actions to ensure the compatibility of environmental conservation and socio-economic development on a sustainable basis. The Paro Resolution also highlighted the importance of drafting a National Environment Strategy for Bhutan and the need to foster specific responsibility in the preservation of the environment. Today, the National Environment Commission has been set up as a high-level multi-sectoral agency, which takes care of all matters relating to the environment.

## **2. NATIONAL ENVIRONMENT STRATEGY**

The National Environment Strategy (NES) titled “The Middle Path” has also been drafted with the help of a multi-sectoral task force and was released in December 1999. The National Environment Commission (NEC) is a national policy-making and regulatory agency responsible for preserving the country’s natural resources. The Commission is a high level, cross-sectoral body of senior ministers and officers currently under the chairmanship of the Minister of Agriculture. The NEC was set up in 1992 and formulates environmental policy, sets environmental standards and legislation and ensures the use of instruments such as environmental impact assessments. The NEC also works closely with donor organisations for environmental projects and represents Bhutan at national and international dialogues on the environment.

The NEC is in the process of setting a consolidated, strategic, multi-sectoral framework for the environment. The institutional mechanism for coordinating conservation activities, monitoring, reporting on status and impacts has yet to be put in place. The first step towards this was the preparation of the National Environment Strategy (NES). As a follow-up to the NES, the NEC prepared the National Environment Action Plan during the 8th Five Year Plan period. The NEC is empowered to meet its long-term objective of defining policies, programmes, plans and actions whereby the sustainability of natural resources are fully integrated into every aspect of Bhutan’s social and economic development. The Commission also monitors the impact of development on the environment and aims to put in place the necessary controls, regulations, mechanisms and incentives in the private/public sectors to achieve sustainable development through the judicious use of natural resources. The coordination of cross-sectoral programmes and the implementation of policies and legislation are another important mandate of the Commission.

## **3. ENVIRONMENT CONSERVATION AND DEVELOPMENT**

In Bhutan, economic development and environmental and cultural integrity are not mutually exclusive, but critical to the long-term viability of Bhutanese development. His Majesty advocates Gross National Happiness as more important than Gross National Product, and this is the principle guiding force of Bhutan's sustainable development strategy. The enlightened conservation ethic and innate understanding of terms such as sustainability, and ecological succession and carrying capacity were practiced in Bhutan, although these terms were not quantified. It was understood that resources were finite and had to be used in balance and that excessive use would deplete the natural base and threaten the whole ecosystem. At the start of its economic development in 1961, Bhutan inherited an almost intact natural environment. Bhutan's isolated location and late start on development and the conservation ethic has shielded the country from many of the detrimental side effects of poorly planned or haphazard development.

The Department of Environmental Conservation was established so that the country could maintain the large protected areas and biodiversity conservation projects. The Trust Fund was established as a Secretariat under the Trust Fund Board. The Royal Society for

the Protection of Nature (RSPN) was established in 1987. It is the only Bhutanese non-governmental organisation focusing on environmental issues. The main goal of the RSPN is to promote awareness among all Bhutanese on the conservation, restoration and sustainable management of the nation's rich natural heritage. One of the benefits of Bhutan's long history of isolation is the development and refinement of institutions that are particularly well suited to the country's unique socio-economic needs. For centuries, traditional village-based institutions were able to effectively address socio-economic and environmental needs.

His Majesty the King personally introduced and promoted the policy of people's participation in the national planning and decision-making processes by establishing the DYT (Dzongkhag Yargey Tshogchungs), or district development committees, in 1981. In 1991, even more broadly based grassroots organisations were formed – the GYT (Geog Yargey Tshogchungs), or block development committees. These groups are actively involved in the preparation of development plans. The DYT and GYT currently work to ensure not only the survival, but also the cultural and spiritual well-being of the Bhutanese people who, despite their ethnic homogeneity, generally live in highly individualised communities. These locally based institutions are being adapted and strengthened to support participatory development. Poor institutional capacity has been identified as a major obstacle to the formulation and implementation of sustainable development policies. Both the Royal Government of Bhutan (RGoB) and NGOs need to improve their institutional capacity for effective implementation of the national development agenda in the most sustainable way. This would require co-ordination amongst institutions, data generation, database development, and improvements in reporting systems. These institutions should be empowered to support community groups and NGOs participating in sustainable development activities.

The RGoB has given top priority to environmental conservation, environmental management and environmentally sustainable development. Environmental legislation and administrative instruments in Bhutan have been based upon ages-old tradition. Some of the policies adopted by the RGoB on environment are illustrated below:

- Improvement of existing laws, rules and notifications and introduction of new legislation and policies to ensure sustainable utilisation of natural resources;
- Preparation of master plans for different sectors of the economy e.g. Forestry, Power, and Roads. These plans include developmental planning, minimisation of environmental impact, and ensuring the utilisation of natural resources on a sustainable basis; and
- Use of economic incentives to encourage sustainable utilisation of resources\_ Increasing involvement of community and non-governmental organisations (NGOs) in planning and implementation of environmental policies.

#### **4. NATIONAL ENVIRONMENTAL STRATEGY**

One of the responsibilities of the NECS is to draw up a National Environmental Strategy (NES) to ensure that environmental concerns are an integral part of the development

agenda. The ultimate goal of the strategy is to guide developmental processes so that impacts on the natural environment are minimised or mitigated. The NES for Bhutan outlines three main avenues of sustainable economic development:

- expanding hydropower;
- increasing agricultural self-sufficiency; and
- expanding the industrial base.

The NES examines each avenue in detail, taking into consideration the current status of each sector, enabling conditions for development, and the implications of such development. The NES is only the first step in the process towards sustainable development. The next step will be the implementation of the strategy, which will be conducted through the Danida-supported Environment Sector Programme Support (ESPS). The National Environmental Strategy provides the guiding framework for all activities and programs of the NECS.

## **5. TRADITIONS, PRACTICES AND ENVIRONMENT**

Bhutan's population is currently estimated at 698,950 people. The majority of that population practices the Vajrayana form of Mahayana Buddhism, which is a mix of the historical teachings of the Buddha and Bon animistic beliefs. Buddhism believes in universal respect for all forms of life and the importance of protecting nature in all its manifestations. This belief is deeply embedded in Bhutanese society and culture. While Buddhism teaches preservation and prohibits killing, Bon inculcates a deep respect for the environment and the belief that all natural phenomena – mountains, rivers, lakes, rocks and the Earth itself – are imbued with powerful spirits that can influence the general well being of a village, community or society. According to traditional beliefs, to disturb and pollute these aspects of the natural world are to incur punishments from the deities ranging from disease to death. Consequently, the Bhutanese have always treasured the natural environment and looked upon it as a source of all life. This reverence for nature has enabled Bhutan's environment to remain largely intact.

## **6. FUTURE CHALLENGES**

In Bhutan, the decade following the UNCED summit in Rio ensured that the Royal Government charted out and implemented a clear agenda for sustainable development. The Bhutanese are working toward their own definition of sustainability that is affected by the evolving nature of the country's historical and cultural heritage, the geography and physical characteristics of the land, and the social and political systems that together leave an indelible, singular stamp on each interpretation of the term.

Sustainable development in the Kingdom has come to mean the capacity and political will to effectively address current development and environmental problems and tomorrow's challenges, without compromising the Kingdom's unique cultural integrity and historical heritage or the quality of life of future generations of Bhutanese. The



Bhutanese people aspire to achieve this by following the “Middle Path,” the balance between economic development and environmental conservation.

To this end, strong institutional, legal and policy frameworks, capacity building and awareness and innovative funding mechanisms for the environment sector have been developed. However, threats to natural resources have still increased because of economic growth, increased per-capita income and demographic changes, making it increasingly challenging to balance development and environmental conservation.

Nationally, biodiversity and natural resource conservation and sustainable development are well-recognized priorities, and progress has been made in adopting measures to protect the environment despite financial and technical constraints. Nevertheless, the state of Bhutan’s environment remains fragile and under continued threat.

One of the most important ingredients needed for sustainable development – political will – is indeed firmly in place in Bhutan. This is because political will serves as the key to success, as effective new initiatives require major changes in the way policies and programs for sustainable development are designed and implemented. Such implementation of innovative partnerships has occurred already, but additional impetus and practical steps are needed to establish the credibility of the 2002 World Summit on Sustainable Development in carrying forward the sustainable development agenda in meaningful, measurable ways.

For Bhutan, the primary future challenges arise from many different fronts that will have to be dealt with on a continuing basis. These include:

- Globalization and the heightened expectations of unsustainable consumerist lifestyles
- Local and national capacity building
- Stronger implementation and enforcement of rules and regulations
- Stronger baseline data and monitoring systems
- Increasing education to influence individual behaviour
- Prioritizing international environmental instruments
- Increasing technology transfer
- Stronger international financing, combined with allocation of domestic resources and enhanced environmental management, particularly in urban areas

For a sustainable path of development, Bhutan’s spiritual beliefs and cultural traditions need to be honoured. This will involve the promotion of the indigenous ways of life that have sustained the Kingdom’s people throughout the ages: the unique means of growing food; of meeting the needs for clothing and shelter; and, eventually, of returning to the land what we have taken from it. Indeed, Bhutan can provide the world with valuable lessons for a sustainable future. No longer should any country have to emulate the

conventional modes of development that are built on the never-ending exploitation of more resources, the scramble for more cars, and the hunger for more technology, more consumer goods, more material commodities.

Bhutan travels on a bold and innovative path to the future, an extension and expansion of the noble road from Rio. With assistance, it will fully realize its destiny: to be the embodiment of the “Middle Path,” the Buddha’s eternal call for moderation and compassion for all things and, above all, for the environment. It is an opportunity that must be seized.

## CHAPTER VII

# 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:** Paro Resolution on Environment and Sustainable Development (1990); National Environment Strategy

**Key Legislation:** Electricity Act 200; Forest and Nature Conservation Act 1995, Mines and Management Act 1995 and the Environmental Assessment Act 2000

**Key Institutions:** National Environment Committee; Planning Commission; National Environment Commission; Ministry of Rural Development; Ministry of Rural Development  
Bhutan Electricity Authority

### 1. INTRODUCTION

Water constitutes a very important natural resource for Bhutan, primarily in the form of major north-south rivers, with a dense network of small, mainly rain-fed tributaries. The annual renewable freshwater resource per capita is estimated at 58,930 cubic meters, indicating that Bhutan is not currently under water stress. Traditionally, the most important use of water was for irrigation of crops, watering of animals and domestic use by rural households. With the inception and development of hydropower projects in the mid-1980s, however, the role of water resources, which are estimated to be able to generate more than 30,000 MW of power, has increased tremendously. Consequently, hydropower has become the dominant sector in Bhutan, comprising about 40% of the nation's total revenue.

Despite these seemingly abundant resources, with the increasing population of Bhutan have come with signs of water scarcity and consequent conflict between irrigation and domestic consumption. Indeed, real problems of insufficient water at the ground level exist, be it for drinking or for irrigation. A recurrent, unresolved issue is the conflict over water resources during peak agricultural season in areas with insufficient water; rainfall can often be erratic, and irrigation canals are often damaged by landslides during the peak period.

## 2. WATER RESOURCE MANAGEMENT

In 2001, the nation's first water body, the Bhutan Water Partnership, was launched with a mandate to coordinate and prepare policy documents, strategic vision documents and action plans in the water resource sector. This inter-Ministerial organisation replaces the ad hoc coordination previously found and is intended to ensure the sustainable utilisation of water resources, maximising economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.

The holistic management of freshwater as an acute and vulnerable resource with economic dimensions, and the integration of sectoral water plans and programs within the framework of national economic and social policy, are thus of paramount importance for action in Bhutan. Better management of urban water resources, for example (including the elimination of unsustainable consumption patterns by metering of usage) is contributing substantially to the alleviation of poverty and improvement of the health and quality of life of the poor.

At the same time, availability of clean and sufficient supply of water for drinking, in both urban and rural areas, is a prerequisite for healthy living and has been emphasised throughout the nation's development. After more than 25 years of implementing water supply schemes, more than two-thirds of Bhutanese people now have safe drinking water close to their communities, and coverage of basic latrines in rural areas was 82%.

The water and sanitation sector received a significant stimulus in 1992 when His Majesty the King issued a Royal Decree stressing that every household must have at least a simple pit latrine. The decree also reaffirms that primary responsibility for operation and maintenance of rural water supply schemes lies with users. A pilot National Baseline Water Quality Survey has also been undertaken to initiate development of a national water quality database for major watersheds in Bhutan.

Interventions in water and sanitation have resulted in notable improvements in water- and hygiene-related illnesses, including skin diseases and worm infections. Even so, children and women still face particular health risks and poor personal and home hygiene remain the leading causes of ill health among Bhutanese children. In urban areas, engine oil from automobile workshops is often drained directly into nearby streams despite legal prohibitions. At the same time, establishing basic facilities in remote communities over rugged terrain makes the target of providing increased coverage to the more than 30% of Bhutanese households that still do not have safe drinking water difficult.

Nevertheless, water is being made a priority among communities that are also concurrently working toward numerous other needs, including establishing community schools. Drinking water in public and private water supplies is now being tested in some areas for bacteriological, chemical and physical properties to meet the minimal physical and aesthetic criteria.

The multisectoral nature of water resource development is recognised, as well as the multi-interest utilisation of water resources for water supply and sanitation, agriculture, industry, urban development, hydropower generation, inland fisheries, transportation and recreation. Special attention will be paid to the growing effects of urbanisation on water demands and usage, and to the critical role played by local and municipal authorities in managing supply, use and overall treatment of water, for which particular support is required. The scarcity of freshwater resources and the escalating costs of developing new resources have a considerable impact on natural, industrial, agricultural and human settlement development and economic growth. Bhutan cannot afford to be complacent about this crucial resource, nor any of its other natural resources.

### **3. LEGISLATION**

There is a need to use some of the significant financial resources arising from hydropower export for domestic watershed management. The Electricity Act 2001 has now provided a firm legal footing for exploitation of the huge hydropower resources and has provided for the establishment of the Bhutan Electricity Authority, which will be entrusted with the responsibility of setting technical and safety standards for hydropower facilities. The Act also lays the framework for the formation of private power companies, inviting private sector participation in the electricity supply industry.

In addition, although legislation related to abstraction and utilisation of freshwater and disposal of wastewater is almost absent, there are initiatives to create an enabling environment with clear water policies and legislation. For example, preparation of a Water Act that could reduce the conflict that currently exists will be a major achievement, as will development of practical management instruments such as preparation of a water resource inventory, and strengthening of institutional capacities and human resources.

## CHAPTER VIII

# SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: ATMOSPHERE

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**Key Issues:** Vehicular pollution; Indoor Pollution; Forest Fires; Human health

**Policy Framework:** Paro Resolution on Environment and Sustainable Development (1990); National Environment Strategy;

**Key Legislation:** The Environmental Assessment Act 2000; Forest and Nature Conservation Act, 1995

**Key Institutions:** National Environment Commission; Road Safety and Transport Authority; Ministry of Trade and Industry

### 1. INTRODUCTION

In the Himalayas, climate change is manifested in natural disasters such as flash floods from melting glaciers, modifications in natural systems in forests, increased health risks from malaria, lung disorders and other diseases, and noticeable alterations in crop growing seasons. Indeed, melting ice and glacial lake overflow are already more frequent in Bhutan – and were the source of a 1994 glacial flash flood that caused considerable damage in the western district of Punakha – while receding glaciers are bringing in their wake avalanches, soil erosion and dramatic changes in river flow.

In Bhutan, where 79% of the population depends on agriculture and natural resources and where hydroelectric power generation is the dominant source of revenue, the negative impacts of climate change would be especially severe. Although the country does not contribute to global emissions of greenhouse gases, it is extremely vulnerable, given its fragile mountain environment, its rich concentration of species and ecosystems, and its lack of resources as a Least Developed Country for adapting to these adverse impacts.

The exact extent of vulnerability of Bhutan to climate change can be better defined only after a scientific analysis of the impacts on the mountain ecosystem. Projects to conduct this analysis of likely impact on water resources, agriculture and livestock are urgently required. Likewise, development of a national policy framework to facilitate implementation of appropriate and effective mitigation measures and adaptation strategies is important.

## 2. URBAN AIR QUALITY

Urban air quality is emerging as a serious issue for Bhutan with the increase in the number of vehicles in the country rising steadily, primarily in urban areas. In the last year alone, the number of vehicles in the Kingdom grew by 15%, from 14,206 to 16,335. In Thimphu, two-wheelers compose about 45% of the total vehicles, while cars and jeeps account for about 35%. Low fuel quality, poor vehicle maintenance and facilities, and geographical factors such as high altitude and narrow valleys particularly aggravate the problem of vehicular pollution.

Although the absolute number of vehicles per person in Bhutan is still relatively low, the National Environment Commission, in collaboration with the Road Safety and Transport Authority, has begun measuring the emission levels of cars, to be followed soon by the institution of nationally acceptable standards. In addition, full privatisation of the public transport sector was achieved in 1990, with 21 operators managing a fleet of more than 100 buses on 73 routes nationwide. The Royal Government likewise has made plans to enhance mass transport services for commuters in the nation's larger towns, and the first city public transport system was introduced in Thimphu in 1999 to reduce pollution in the narrow valley where the capital is located. As noted above, the import of inefficient refurbished vehicles also has been banned, as has the import of two-wheelers with two-stroke engines. Efforts are being made to improve the quality of fuel and to ensure the availability of spare parts in the local market, and footpaths have been constructed to improve traffic movement in urban areas.

Other contributors to urban air pollution include forest fires and the very high level of fuelwood used for heating. In Thimphu alone, the annual consumption of fuelwood is about 916,560 cubic feet. The burning of fuelwood causes particularly high levels of pollution during winter mornings. However, successful interventions have occurred; for example, in the past, the three common kitchens of the Royal Bhutan Police in the capital consumed 4,000 cubic feet of fuelwood a month. Today, with the installation of electric cookers through the Bhutan Trust Fund for Environmental Conservation, fuelwood consumption has been virtually stopped.

### **Urban vehicles**

73 percent of petrol vehicles did not meet the Thai emission standards. Significantly, 20% of the vehicles were more than 10 years old while 40% were between five and 10 years. The problem of emissions is aggravated by the poor quality of fuel available in Bhutan. Diesel sold has high sulphur (0.25%) and wax content, and the vehicles are not fitted with high-altitude compensators. As a result vehicles emit more soot. Diesel vehicles are three times more polluting than petrol vehicles.

In a recent study conducted by the NEC (National Environmental Commission), emission levels were found to be high in the vehicles of Thimphu. A total of 507 petrol-vehicles and 558 diesel vehicles were tested in this study. 60% of the petrol and 96% of the diesel

engine vehicles did not meet the Indian emission standards. Similarly 57% of petrol and 95% diesel vehicles in Thimphu did not meet British emission standards.

The lower price of diesel fuel results in a larger number of diesel vehicles. Diesel engine vehicles are also kept in start mode for a long period – a minimum of 15 minutes to heat the engine during the winter – which results in higher levels of carbon monoxide, nitrogen oxides, hydrocarbons and particulate matter in the atmosphere. CO, HC, and benzene emissions are high in gasoline vehicles compared to diesel vehicles. In Bhutan, there are no systematic time series data available on the emission loads of different pollutants emanating from vehicular sources.

### **Budget allocation**

A budget of Nu. 12.26 million has been allocated to the construction of footpaths to improve traffic movement in urban areas. Nu. 493 million has been allocated to the purpose of widening and improving 190 km of road. Nu. 546 million has been allocated for the maintenance of 2,756 km of roads. Nu. 134 million has been allocated for the realignment of 27 km of road on the East-West Lateral high ways. An amount of Nu. 10.26 million has been allocated in the 8th Five Year Plan to improve parking areas and develop regulations to improve the urban environment.

## **3. INDUSTRIAL AIR POLLUTION**

Air pollution from industries not only affects the health of the workers but also the surrounding environments. Small-scale cement plants are highly inefficient and do not have pollution control systems. Bhutan's largest cement company (Penden Cement Authority Ltd.) has modified its plant and installed pollution control devices such as electrostatic precipitators.

The chemical industry is also a major source of air pollution. The main pollutants from chemical industries are CO<sub>2</sub>, CO, SO<sub>2</sub>, NO<sub>x</sub>, and particulate matter. Another problem with this industry is the lack of storage space for the raw of materials limestone, coal and charcoal. The height of the emission stacks is low, with the result that emissions are not properly dispersed, causing air pollution in the surrounding valley. Mining industry operations in open cast mines are also sources of air pollutants. Dust generated in open cast mines moves downwind and deteriorates the ambient air quality of the surroundings. There are no data available to assess the quality of ambient air in and around mines.

Heating of bitumen along road construction sites also contributes to air pollution. A fire is lit in an open space with a saucer pan to heat the bitumen, and this process is inefficient, as heat is lost from all sides. In a similar vein, dust from unpaved roads contributes also because particulate levels rise when vehicles ply on dusty roads.

## **4. DOMESTIC AIR POLLUTION**

A recent survey carried out of 8,421 households in Thimphu revealed that 3,902 households have installed bukharis and other heating appliances, which use wood and



charcoal. Bukharis are used normally between November and March. Most houses lack proper insulation. Around 50% of heat is lost through ceilings and cracks in door and windows and as a result most of the heat is lost within a few hours. In Bhutan, for bukharis alone, more than 10,184.22 cubic feet, i.e. 42 truckloads of firewood are burnt each day during the winter months in the Thimphu valley. On average, each household burns about 2.614 cubic feet of firewood every day over the course of a year. Thimphu's annual consumption of firewood is approximately 916560 cubic feet. The burning of firewood causes high levels of pollution during winter mornings.

More than 96% of the houses in and around Thimphu have electricity connections, of which 60% indicated a willingness to switch over to electrical appliances for heating and cooking. Kitchen garden waste burning during the dry season is another practice that contributes to air pollution in the rural areas and solar radiation from unpainted corrugated galvanized iron (CGI) sheets used for roofing affects the natural mixing of air at high altitudes.

### **Health impacts due to growing air pollution problems**

In Bhutan, there has been an increase in the incidence of acute respiratory tract diseases, cough and colds, bronchitis and asthma. Acute respiratory tract diseases increased from 10.08% in 1990 to 14.02% in 1998, whereas other respiratory diseases have increased from 2.45% in 1990 to 6.82% in 1998. Cough and colds, bronchitis and asthma have also gone up from 16% to 22.4% and 1.95% to 2.95% respectively during the same period.

## **5. LEGISLATION**

In the legislative realm, the National Environment Commission and the Ministry of Trade and Industry are working on clean technology environmental management programs. Moreover, air quality standards and industry-specific emission standards, as well as the aforementioned vehicle emission standards, are being formulated. The Environmental Assessment Act 2000 lays the base for environmentally sound industrial development. Further possibilities exist in the expansion of urban public transportation, electrical stoves for major wood-burning institutions and subsidised electrical appliances for rural communities.

## CHAPTER IX

# 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:** Paro Resolution on Environment and Sustainable Development (1990); National Environment Strategy;

**Key Legislation:** Hazardous Substances Act; Forest and Nature Conservation Act, 1995;

**Key Institutions:** National Environmental Commission;

### 1. INTRODUCTION

Industrial activities in Bhutan have grown tremendously. The number of industries increased from 742 in 1990, to 4,394 in 1997. The small scale sector grew 17 times during the same period. Mineral-based industries have grown faster in the last 20 years. The contribution of the industrial sector to the GDP increased from 0.01% in 1982 to 3.2% in 1992.

#### Cement industry

At present 4 cement plants are operating in Bhutan. Cement production from these plants is more than 300,000 metric tones annually. Out of these plants, three are small with installed capacities of 30-150 tonne per day (tpd), while the remaining plant has an installed capacity of about 800 tpd. Major pollutants namely particulate matter, fugitive emissions and gaseous pollutants are emitted from the operations of cement plants. Most of the dust is generated within the region of the kiln where calcination is undertaken.

#### Chemical industry

In Bhutan there are four chemical industries. These chemical industries produce calcium carbide, ferro silica, plaster of paris, rosin and turpentine and activated carbon. As a result, ambient and work zone emissions are the major problems in these facilities. The principal pollutants are dust and particulate emissions. Various other gaseous emissions such as carbon monoxide, carbon dioxide, and sulphur dioxide also emanate from the chemical industry.

## 2. INDUSTRIAL WASTE

The mining industry Bhutan is rich in minerals. The major minerals mined are limestone, gypsum, coal, quartzite and dolomite. Most of these minerals are mined for domestic consumption. The major problems due to these mining industries are management of overburden and drilling waste, reclamation and runoff from mined areas, which cause soil erosion and air pollution (TERI and Shriram Institute for Industrial Research 1999).

The chemical safety profiles prepared for Bangladesh, Indonesia, Maldives, Nepal, Sri Lanka and Thailand enabled the Regional Office to assess the existing situation and identify problems and issues in the management of chemical safety programmes. Activities were also carried out on health-risk assessment of chemicals, and strengthening capacity for environmental monitoring. A consultant assisted the Regional Office in the preparation of a questionnaire on hazardous waste management. This would facilitate the assessment of the hazardous waste situation at the country level, and the preparation of hazardous waste country profiles through national consultants. The WHO continues to accord high priority to the promotion of chemical safety.

Following the adoption of a framework of action for strengthening national chemical safety programmes in countries of the Region, action has been initiated to address some of the priority issues. These include strengthening of capacity in the areas of chemical risk assessment and management, information systems and database development, poison prevention and management, and chemical emergency preparedness. A Regional Consultation on Poison Control was held in the Regional Office in December 1998 which resulted in the development of action plans for a pesticide poisoning database, poisoning prevention and treatment, a strengthening of analytical toxicological facilities, and multicentric study of organo-phosphorus pesticide poisoning.

## CHAPTER X

### SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: FORESTRY

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

**Policy Framework:** Paro Resolution on Environment and Sustainable Development (1990); National Environment Strategy; National Forest Policy, 1974

**Key Legislation:** Forest Act 1969, Forest and Nature Conservation Act 1995, Mines and Management Act 1995 and the Environmental Assessment Act 2000 Paro Resolution on Environment and Sustainable Development (1990); National Forest Act (1969); Land Law (1979); Pastureland Law (1979); Inheritance law (1979); Livestock Law (1979); Wildlife Act (1985); Plant and Quarantine Act and regulations (1988); Mining Act (1995);

**Key Institutions:** National Environment Committee; National Environment Commission; Ministry of Rural Development; Ministry of Rural Development

#### 1. INTRODUCTION

Bhutan has devoted over 26% of its total land area to extensive protected areas systems reflecting the strong biodiversity conservation policy and the ethic of the people. The extensive protected area system in Bhutan stretches from the sub-tropics in the south, temperate in the central interior, to the alpine zone in the north. This protected area system serves as a unique system of in-situ conservation of biodiversity.

Several plant species listed under Schedule I of Bhutan's Forest and Nature Conservation Act, 1995 are also from the alpine and sub-alpine regions and have very specific micro-habitat requirements. For instance, the threatened species *Podophyllum hexandrum* (Himalayan May Apple) grows only among *Berberis-Juniperis* shrubberies in rocky areas, and frequent fires and systematic removal of shrubs from such areas may cause the local extinction of this species. Another example is *Circaeaster agrestis*, a rare plant that grows only under rock shelters and caverns.

Recognising these factors, the Royal Government of Bhutan has established a system of national parks, wildlife sanctuaries and nature reserves and has a policy of maintaining forest cover of more than 60% of the total land area. Presently, Bhutan has more than 70% of the total land cover under forest cover. The present forest policy stipulates that revenue generation is only secondary to conservation and protection. The Forest and Nature Act of Bhutan, 1995 also stipulates that all forest harvesting or logging operations

should be strictly based on approved management plans and sound ecological considerations to ensure sustainability.

The experiences of other countries with similar topographical relief and economic conditions have demonstrated how difficult it is to exploit mountain forests in a genuinely sustainable manner. In spite of good intentions, deforestation and severe degradation were often the end results. As a consequence of both internal and external experiences, it became increasingly apparent that the indirect benefits of forests far outweighed the direct cash revenues from the sale of timber. According to the new government policy, Bhutan's forests are to serve the following prioritised needs:

1. Watershed maintenance and general protection against erosion;
2. Maintaining a stable climate and Bhutan's rich biodiversity;
3. Use by rural farmers for grazing, firewood collection, fodder, timber for construction, and non-timber products;
4. Supplying raw materials for the growing wood-based industrial sector; and
5. Export (only if sustainability permits).

## **2. DIRECT AND UNDERLYING CAUSES OF THREATS**

Some of the causes for the threats facing Bhutan include:

- Overgrazing by domestic livestock in range and pasture areas, which leads to attrition or loss of species, reduction of productivity, and erosion. Similarly, this practice in forest areas leads to loss of reproduction of forest species and to changes in vegetation composition.
- The country's increasing population and its reliance on wood for fuel. This occurs wherever there is human habitation but it is especially notable around population centres including permanent military posts. The total demand for wood and wood products in terms of volume is dominated by fuelwood demand. The total consumption of fuelwood is estimated at 1,318,700 cubic metres, of which the household consumption is about 89%. Consumption is estimated to grow to 2,146,200 cubic metres by the end of 2012-13. The use of other fuels is rather small, only about 3% of the total fuelwood consumption.
- Shifting Cultivation
- Forest Fires, which are mostly if not entirely caused by humans.
- Overexploitation of plants and animals, especially through collection (e.g., of medicinal plants), poaching, and heavy use (e.g., of tree species for roofing shingles).
- Inadequate resource management, which in turn is caused by inadequacies in policy, legal and institutional arrangements, information and staffing.
- Inadequate implementation of policy and legislation, and an inadequate legal system which promotes unsustainable exploitation of biodiversity resources.

- Limited institutional systems that promote unsustainable exploitation particularly because of the fragmentation of responsibilities involving biodiversity, inadequate coordination between the government units involved, and inadequate authority to achieve biodiversity conservation.
- Inadequate data and information on biodiversity and its use, and inefficient use of the information that does exist.
- Threats from outside national borders, which primarily involve transborder poaching of medicinal plants, and poaching of larger mammals, especially along the southern border.

With its beautiful and largely unspoiled Himalayan setting, its rich flora and fauna, and its vibrant Buddhist culture, Bhutan has become an increasingly popular destination for Western tourists. Besides being an easy generator of hard currency revenue, tourism also provides impetus for the development of important service sector activities such as hotels, restaurants, transportation, and communications services that can also be used by the Bhutanese. Tourism has also helped to promote indigenous cottage industries and handicrafts, and an expanding network of shopkeepers in Thimphu and other frequently visited locations.

However, preserving the pristine nature of Bhutan's higher elevations is paramount to maintaining the steady flow of the tourists. Because of the highly fragile nature of mountain ecosystems, damage done takes much longer to undo. Maintaining the integrity of these systems thus requires additional measures of diligence and prevention. If the alpine meadows, streams, and forests that Western tourists are willing to pay substantially more to see are to be preserved, a wide variety of actions will need to be taken to ensure that human impacts are kept well below maximum levels of acceptability.

Among the more pressing environmental problems currently being encountered are:

- the destruction of vegetation through the cutting of slow-growing trees for firewood;
- the erosion of delicate vegetation;
- the creation of "garbage trails" through the indiscriminate disposal of non-biodegradable waste; and
- The alteration of essentially sustainable farming and cropping patterns to unsustainable but highly profitable ones to meet the needs of affluent tourists.

To reduce these adverse impacts, the Ministry of Trade and Industry has drawn up 15 comprehensive guidelines for environmentally friendly tourism.

The interaction of topography, climate and human use has resulted in the development of a complex pattern of vegetation and habitat types all over Bhutan. The forests of Bhutan

can be divided into three eco-floristic zones based on altitudes. Each zone contains a distinct set of eco-zones as follows:

- Alpine zone including areas above 4,000 m of altitude where there is no forest cover;
- Temperate zone which lies between 2,000 m and 4,000 m of altitude containing the major temperate conifer and broadleaf forests; and
- Sub-tropical zone which lies between 150 m to 2,000 m of altitude containing the tropical and subtropical vegetation.

### **3. CONSERVATION POLICY AND LEGISLATION**

Bhutan has retained much of its natural vegetation intact for several centuries, and is justifiably proud of the efforts made to protect its forests. Forest regeneration remains a top priority: H.M. the King Jigme Singye Wangchuck has stated that

‘Throughout the centuries, the Bhutanese have treasured their natural environment and have looked upon it as the source of all life. This traditional reverence for nature has delivered us into the twentieth century with our environment still richly intact. We wish to continue living in harmony with nature and to pass on this rich heritage to our future generations.’

The preservation of the country’s rich biological diversity can be attributed to two factors, the enlightened leadership and the strong conservation ethic of the Bhutanese people. Conservation is a central tenet of Buddhism, which believes in preserving nature.

The importance of protecting nature in all its manifestations has permeated the Bhutanese consciousness and has become integral to the Bhutanese way of life. Therefore, preservation of the environment, as well as of sacred and cultural heritage sites is an important and integral part of Bhutanese value system. Through its forest policies, Bhutan is committed to maintaining a minimum of 60% of the land area under forest cover. The Royal Government has always aimed at policies for conservation and the sustainable utilization of natural resources. Beginning from the mid 1960s until now, 26.23% of the area of the country has been declared as protected area. The protected areas consist of four national parks, four wildlife sanctuaries and one strict nature reserve. More than 70% of the protected areas have good forest cover.

Management of the protected areas has been entrusted to the Nature Conservation Division under the Department of Forestry Services. The Royal Government of Bhutan created the Forestry Services Division (now Department of Forestry Services) in 1952. The Forest Act of 1969 (now superseded by the Forest and Nature Conservation Act 1995) declared all forestland as Government Reserved Forest whereby the forest department took responsibility of the stewardship of forest resources. Since then, incidences of forest fires, over utilisation of forest products and encroachment of forestland have been controlled to a large extent. More importantly, the National Forest Policy promulgated by His Majesty soon after his enthronement in 1974 encompassed a farsighted vision. Contrary to forest policies in other countries, Bhutan’s National Forest

Policy states that the sale of timber is only of secondary importance. The policy clearly states that for a mountainous country with a fragile ecosystem and an expanding agricultural economy, forestry operations should accord the highest priority to indirect benefits and the conservation role.

All forestry operations were nationalised in 1979 with the main objective of protecting the forests from over felling. Also in 1979, a Social Forestry Programme was launched as per the Royal Decree of His Majesty, with the main aim of promoting people's participation in the management of forest resources and to reduce pressure on the conventional forest. There are four main goals set to direct the forest policy to ensure that the forest resources are used according to sustainable principles, contributing to social justice and equity. Further, the policy aims to ensure conservation of the environment, and only thereafter aim at deriving economic benefits from the forest as rationally managed resource. The four guiding principles of the forest policy are as follows:

- Protection of the land, its forest, soil, water resources and biodiversity against degradation, such as loss of soil fertility, soil erosion, landslides, floods and other ecological devastation and the improvement of all the degraded forest land areas, through proper management systems and practices
- Contribution to the production of food, water, energy and other commodities by effectively coordinating the interaction between forestry and farming systems
- Meeting the long-term needs of Bhutanese people for wood and other forest products by placing all country's production forest resources under sustainable management
- Contribution to the growth of national and local economies, including exploitation of export opportunities, through fully developed forest based industries, and to contribute to balanced human resources development, through training and creation of employment opportunities.

The Bhutan Logging Corporation (now Forestry Development Corporation) was established in 1984. The Forestry Development Corporation executes forestry operations (harvesting and plantations) in the forest management units as per prescriptions of the management plan. The Forest and Nature Conservation Act 1995 clearly states that no Government Reserved Forest will be worked / operated unless there is an approved Forest Management Plan. Timber harvesting to meet local demand is undertaken by designated forest management units which have approved forest management plan. As of July 1999, 14 management units and three working schemes covering an area of 143 966 hectares had approved management plans. Another 11 forest management units covering an area of 141 642 hectares have been inventoried and management plans are under preparation.

Tseri (shifting cultivation) which has negative impacts on the environment and forest resources still continues in many parts of Eastern Bhutan. Of the total area of cultivation, nearly 30% is under tseri or other forms of shifting cultivation. The Royal Government is committed to phasing out this unsustainable form of farming. As there is no evidence of



an equal area suitable for permanent cultivation, the phasing out of shifting cultivation is a major challenge, which is being addressed throughout the 8th Five-Year Plan. Under the Third Forestry Development Project of the World Bank, the Department of Forestry Services is promoting plantations and rehabilitation of abandoned Tseri land in six eastern districts.

Due to increase in demand/pressure for forest products, afforestation/ reforestation programmes of barren or degraded forestland and clear-felled areas have been initiated recently to improve the sustainable capacity of forestland. By the end of 1997, the Department of Forestry Services had achieved about 17,123.37 hectares of plantation. Eventually, Bhutan will want to move from being a passive conserver of genetic resources to an active partner in their commercial utilization and international promotion. The hope is to someday develop the technical and legal capacity to undertake the sophisticated genetic research and international negotiations involved in germ plasm development and gene patenting. In addition to its current small scale commercial activities in medicinal herbs and decorative flora, Bhutan would like to develop its own pharmaceutical industry so that it can take proper advantage of its own immense biological storehouse.

Bhutan was a participatory country in the Gender Analysis and Forestry Training of Trainers Programme of 1992-93, and two staff members of the Ministry of Agriculture participated. A focal point on gender issues was established in the Ministry of Agriculture and the training of planning staff in obtaining better information for planning is envisioned.

With support from the FAO, a workshop on Strengthening Re-afforestation Programmes in Asia (STRAP) was held from 12-14 December 1995 to finalise a national re-afforestation strategy, in which involvement of the private sector, including industry and communities, was recommended as one of the strategies to solve the problems of limited financial and human resources, and the cost effectiveness of re-afforestation.

The Bhutan Forest Act of 1969 was replaced by the approved Forest and Nature Conservation Act of 1995 during the 73<sup>rd</sup> session of the National Assembly. A review has been commissioned to redress the rapidly emerging policy issues associated with land distribution, tenure and controls. Given the dramatic increase in orchards and plantation crops, with subsequent encroachment onto restricted forest lands and the displacement of poorer farmers onto marginal lands, the Land Act has been revised to include orchards as well as wetlands, dry lands, and shifting cultivation sites within the 25 acre ceiling. The revision of the Forest Act is under consideration by the Government. This revision will ensure consistency and reflect linkages between the draft Forest Policy, draft Forest Act, and draft Social Forestry Rules.

## CHAPTER XI

### SECTORAL ISSUES, LEGISLATION AND INSTITUTIONS: BIODIVERSITY

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**Key Issues:** Loss of Forest Cover, Biodiversity Management; Protection of endangered Species; Environment Education; Capacity Building; Enforcement and Compliance; Ecosystem Development; Peoples Participation

**Policy Framework:** Paro Resolution on Environment and Sustainable Development' 1990; National Environment Strategy;

**Key Legislation:** Bhutan's National Forest Policy; Forest and Nature Conservation Act 1995; The Forest Act of 1969

**Key Institutions:** Department of Forestry Services; Department of Forestry Services; Forestry Development Corporation

#### 1. INTRODUCTION

Bhutan has very high levels of biological diversity at the ecosystem, species and genetic levels. Very few countries in the world match Bhutan's biological diversity and fewer still have taken such strong steps to conserve their biodiversity. Bhutan ranks in the top ten percent of countries with the highest species density (species richness per unit area) in the world, and it has the highest fraction of land in protected areas and the highest proportion of forest cover of any Asian country. Other countries in the region have taken less action to conserve their biodiversity and they face far greater threats to what they have left. Bhutan is one of very few biologically diverse countries in the world which have the opportunity to maintain its biodiversity largely intact in the coming decades.

#### 2. CONSERVATION OF BIODIVERSITY

Bhutan has great diversity of ecosystems partly because of its location at the juncture of the Palearctic realm of the temperate Euro-Asia and the Indo-Malayan realm of the Indian sub-continent, and partly due to the country's great geological relief and climatic heterogeneity. Valleys in the inner mountains receive less than 800 mm of precipitation, while rainfall in the lowlands is as high as 5,500 mm. The country includes a range of ecosystems from sub-tropical forests in the south at an elevation of 150 meters to mid-elevation temperate forests, to the northern alpine zone above 7,000 meters.

While there are few areas of the country which have not experienced some human activities, most ecosystems remain substantially intact. According to the latest land use

survey conducted by the Land Use Planning section (LUPP), MOA, the total land area under forests was 29,045 km<sup>2</sup> or 72.5 % of the country. Out of this total, 8.1% or 3,258 sq. km have been classified as degraded forest or natural scrub forest. Coniferous forests constitute 26.5% broadleaf forests 34.3% and 0.2 % are under plantation.

Several plant species listed under Schedule I of Bhutan's Forest and Nature Conservation Act, 1995 are also from the alpine and sub-alpine regions and have very specific micro-habitat requirements. For instance, the threatened species *Podophyllum hexandrum* (Himalayan May Apple) grows only among *Berberis-Juniperis* shrubberies in rocky areas, and frequent fires and systematic removal of shrubs from such areas may cause the local extinction of this species.

Recognizing these factors, the Royal Government of Bhutan has established a system of national parks, wildlife sanctuaries and nature reserves and has a policy of maintaining forest cover of more than 60% of the total land area. Presently, Bhutan has more than 70% of the total land cover under forest cover and more than 26 percentage of the land cover under existing protected areas system.

The experiences of other countries with similar topographical relief and economic conditions have demonstrated how difficult it is to exploit mountain forests in a genuinely sustainable manner. In spite of good intentions, deforestation and severe degradation were often the end results. As a consequence of both internal and external experiences, it became increasingly apparent that the indirect benefits of forests far outweighed the direct cash revenues from the sale of timber. According to the new government policy, Bhutan's forests are to serve the following prioritised needs:

6. Watershed maintenance and general protection against erosion;
7. Maintaining a stable climate and Bhutan's rich biodiversity;
8. Use by rural farmers for grazing, firewood collection, fodder, timber for construction, and non-timber products;
9. Supplying raw materials for the growing wood-based industrial sector; and
10. Export (only if sustainability permits).

### **3. DIRECT AND UNDERLYING CAUSES OF THREATS**

Some of the causes for the threats facing Bhutan include:

- Overgrazing by domestic livestock in range and pasture areas, which leads to attrition or loss of species, reduction of productivity, and erosion. Similarly, this practice in forest areas leads to loss of reproduction of forest species and to changes in vegetation composition.
- The country's increasing population and its reliance on wood for fuel. This occurs wherever there is human habitation but it is especially notable around population centres including permanent military posts. The total demand for wood and wood products in terms of volume is dominated by fuelwood demand. The total

consumption of fuelwood is estimated at 1,318,700 cubic metres, of which the household consumption is about 89%. Consumption is estimated to grow to 2,146,200 cubic metres by the end of 2012-13. The use of other fuels is rather small, only about 3% of the total fuelwood consumption.

- Shifting Cultivation
- Forest Fires, which are mostly if not entirely caused by humans.
- Overexploitation of plants and animals, especially through collection (e.g., of medicinal plants), poaching, and heavy use (e.g., of tree species for roofing shingles).
- Inadequate resource management, which in turn is caused by inadequacies in policy, legal and institutional arrangements, information and staffing.
- Inadequate implementation of policy and legislation, and an inadequate legal system which promotes unsustainable exploitation of biodiversity resources.
- Limited institutional systems that promote unsustainable exploitation particularly because of the fragmentation of responsibilities involving biodiversity, inadequate coordination between the government units involved, and inadequate authority to achieve biodiversity conservation.
- Inadequate data and information on biodiversity and its use, and inefficient use of the information that does exist.
- Threats from outside national borders, which primarily involve transborder poaching of medicinal plants, and poaching of larger mammals, especially along the southern border.

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

The Royal Government has established a system of national parks, wildlife sanctuaries and nature reserves for *in situ* conservation of biodiversity across more than 26% of the country's land area. Indeed, laws covering protected areas are often more stringent than ordinary forestry laws, although indigenous communities that have traditionally relied on forest resources for livelihood sometimes inhabit protected areas. Again, the Kingdom's strong conservation ethics have come at the cost of economic development and should be supplemented by compensation from international sources. The Forest and Nature Conservation Act 1995 establishes guidelines for the creation and management of all protected areas; this Act calls for strategies for biodiversity conservation to be built upon two main concepts:

- Conservation value lies in the cumulative effect of species diversity and
- Natural resources must be used to meet the collective needs of the Bhutanese people

In late 2001 a new vision and strategy document was adopted to lead to more effective management of protected areas. It is intended to ensure an increasingly focused approach and also take into account emerging conservation issues in management of the areas. Although major problems include lack of adequate communication among stakeholders, human-wildlife conflicts, poaching, inadequate human and financial resources, and forest fires, potential for ecotourism and research opportunities has been outlined with strong political support.

Eventually, Bhutan will want to move from being a passive conserver of genetic resources to an active partner in their commercial utilization and international promotion. The hope is to someday develop the technical and legal capacity to undertake the sophisticated genetic research and international negotiations involved in germ plasm development and gene patenting. In addition to its current small scale commercial activities in medicinal herbs and decorative flora, Bhutan would like to develop its own pharmaceutical industry so that it can take proper advantage of its own immense biological storehouse.

## CHAPTER XII

### 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; Ecodevelopment; Peoples Participation Local Peoples' dependency on Forests;

**Policy Framework:** Paro Resolution on Environment and Sustainable Development (1990); National Environment Strategy

**Key Legislation:** Forest Act 1969, Forest and Nature Conservation Act 1995, Mines and Management Act 1995 and the Environmental Assessment Act 2000 National Environmental Strategy; National Forest Act (1969); Land Law (1979); Pastureland Law (1979); Inheritance law (1979); Livestock Law (1979); Wildlife Act (1985); Plant and Quarantine Act and regulations (1988); Mining Act (1995);

**Key Institutions:** National Environment Committee; National Environment Commission; Ministry of Rural Development; Ministry of Rural Development

#### 1. INTRODUCTION

Alpine habitats are particularly important from their aesthetic, hydrological, and biological view points. Low productivity and increasing pressure from livestock in these areas warrant immediate action in terms of controlled grazing and habitat monitoring.

Alpine scrub forms an important habitat for blue sheep during winter. The moist alpine scrub and adjacent meadows along major river valleys are used during summer. The birds characteristic to alpine scrub include red billed chough, fire tailed sun-bird, black red start, rose finches, red headed bullfinch, white winged grosbeak, and Juniper finch, although most of them are summer visitors.

Sub-alpine forests are used by a variety of mammals and birds such as Himalayan musk deer, serow, takin, blood pheasants, tragopans, and monal. Some of the rarer bird species characteristics to sub-alpine birch rhododendron forests include golden bush robin, gold crowned black finch and fire-tailed myzomis.

Pine forests are close to human habitation and prone to disturbances from frequent fires, fuelwood and grass collection, and as a result wildlife abundance is low compared to other habitats. Nevertheless, several rare species, including pheasants, partridges, and mammals such as goral and Himalayan yellow throated marten are known to occupy these habitats.

Temperate broad leaf forest covers a wide altitudinal range and support a large number of mammal and avian species. Old growth forests, with a variety of fruit-bearing trees and bamboo brakes, provide habitat for Himalayan black bear, red panda, squirrels, sambar, wild pig, barking deer, tiger, common leopard, and kaleej pheasant. This zone is also rich in oak species, most of which are highly preferred by local people for firewood and agricultural implements.

Riverine vegetation not only checks bank erosion but also provides critical habitat for several animal species. The alpine willow and *Hippophae-Myricaria* scrub, for example, serve as habitat for lynx and takin, and the lower riparian act as dispersal corridors for tigers. from erosion.

Although specifics about Bhutan's avifauna are still poorly known, around 770 species have been recorded, including at least 12 globally threatened species. Aquatic habitats also are important but require significant further study. With regard to crop species, the diversity also surpasses expectations, considering Bhutan's size. Through a long process of natural and human selection, a wide array of crops and of varieties within crop species exists, sometimes hidden in remote areas. Many of the native crops, as well as those that have been introduced into Bhutan long ago, possess significant genetic diversity and are ecologically well-adapted to the specific requirements of the local environment. The diverse Bhutanese flora have affinities to Southeast Asia, China/Japan, Tibet, the Euro-Siberian region and the Arctic/alpine areas of Europe and Asia, as well as, to a limited extent, the flora of India and Sri Lanka. Of the 5,446 species of vascular plants, as many as 750 are endemic to the Eastern Himalayas and 50 or more are endemic to Bhutan itself. The flora includes more than 50 species of rhododendron and numerous species of economic value. More than 300 species of medicinal plants are found that are used in traditional herbal medicine. The Bhutanese flora is considered of great scientific value not only because of its biodiversity but also because of its relatively good state of preservation.

## 2. LEGISLATION

Whilst stringent legislation and regulatory provisions are in place to protect wild fauna and flora, poaching continues due to a dearth of trained staff, lack of information and awareness amongst the general population, and inadequate equipment for surveillance. In order to address these problems, the Forestry Services Division launched the anti-poaching programme in 1995 with financial support from the WWF. Specifically, the programme aims to:

- Increase the efficacy of implementation of legislation on wildlife protection by enhancing coordination among various law enforcement agencies and by involving local communities;
- Establish and support anti-poaching squads in vulnerable areas by providing them with adequate training and equipment; and
- Educate and raise the awareness of the general public on the implications and issues of poaching to enlist their support for wildlife protection.

## CHAPTER XIII

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

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

Key Legislation: the Paro Declaration in 1990; Forest and Nature Conservation Act, 1995; National Forest Policy, 1974; National Forest Act (1969); Land Law (1979);

Key Institutions: Department of Tourism; Ministry of Trade and Industry; The Tourism Authority of Bhutan (TAB); Association of Bhutanese Tour Operators

#### 1. INTRODUCTION

With its beautiful and largely unspoiled Himalayan setting, its rich flora and fauna, and its vibrant Buddhist culture, Bhutan has become an increasingly popular destination for Western tourists. Besides being an easy generator of hard currency revenue, tourism also provides impetus for the development of important service sector activities such as hotels, restaurants, transportation, and communications – services that can also be used by the Bhutanese. Tourism has also helped to promote indigenous cottage industries and handicrafts, and an expanding network of shopkeepers in Thimphu and other frequently visited locations.

Preserving the pristine nature of Bhutan's higher elevations is paramount to maintaining the steady flow of the tourists. Because of the highly fragile nature of mountain ecosystems, damage done takes much longer to undo. Maintaining the integrity of these systems thus requires additional measures of diligence and prevention. If the alpine meadows, streams, and forests that Western tourists are willing to pay substantially more to see are to be preserved, a wide variety of actions will need to be taken to ensure that human impacts are kept well below maximum levels of acceptability.

Among the more pressing environmental problems currently being encountered are:

- the destruction of vegetation through the cutting of slow-growing trees for firewood;
- the erosion of delicate vegetation;
- the creation of "garbage trails" through the indiscriminate disposal of non-biodegradable waste; and
- The alteration of essentially sustainable farming and cropping patterns to unsustainable but highly profitable ones to meet the needs of affluent tourists.



But there are also socio-economic problems being generated as well, and these are less open to resolution. Through their lack of awareness of traditional culture and customs, tourists can contribute to the erosion of traditional Bhutanese values and can impose unnecessary pressures on local people, especially in remote areas. Though local people are benefiting from tourism, it has also heightened materialism and eroded traditional community standards. In lieu of extending traditional Bhutanese hospitality at minimal (if any) charge, many villagers now charge rates which other Bhutanese cannot afford to pay. For example, remote village lodges with few modern facilities often charge as much as an average hotel in Thimphu. In a correlated development, barter economies have been transformed into monetary ones.

Though the impacts and activities themselves stretch across a number of economic and social sectors, their management clearly falls upon the tourism sector in so far as it is responsible for coordinating tourism in the country. A number of the guidelines that have been submitted by the Ministry of Trade and Industry address the various forms of "cultural pollution" currently being experienced. In general, they focus on imposing standards of etiquette, dress, and deportment and limiting tourism activities to select and hence minimal areas of the country. As the tourists themselves cannot be expected to have a proper Bhutanese respect for local tradition, culture, and religion, their guides must be trained in how to influence, regulate, and correct improper behaviour.

The Tourism Authority of Bhutan (TAB) is responsible for training and certifying guides. The training involves teaching them about local culture and history and inculcating respect and appreciation for local standards of dress and etiquette.

## **2. ECOTOURISM**

There is considerable scope for Bhutan to increase its economic gains from eco-tourism without threatening its biodiversity. Jigme Dorji National Park is already a tourist attraction, and the Royal Manas National Park will become one when conditions permit it to be reopened. Other protected areas in Bhutan could also become attractive to tourists with appropriate investment. Bhutan has many of the features of a number of successful ecotourism destinations – the unique high elevation trekking experiences that draw tourists to Nepal, the “charismatic megavertebrates” that draw visitors to Kenya, and the species richness and scenic beauty that draws tourists to Costa Rica. The potential for eco-tourism in Bhutan could be significant. Belize, a country half the size of Bhutan, had tourism receipts of \$73 million in 1993 and surveys show that over half of the tourists visiting that country participated in nature based activities. Costa Rica – only slightly larger than Bhutan – reported 684 000 overnight visitors in 1993 who spent a total of \$577 million. Tourists spend on average \$148 per day in Costa Rica. More than 50 per cent of the visitors to Costa Rica say that the national parks are their “principal attraction”. However, just as a high volume of tourists can destroy cultural values in a country, so too, it can degrade biodiversity. Bhutan’s current goal of developing high income/low volume tourism applies equally to eco-tourism.

### 3. TOURISM AND THE ENVIRONMENT

Because of the highly fragile nature of mountain ecosystems, unplanned tourism can pose a major threat to the environment. In addition, tourism can also cause erosion of cultural integrity and values due to the introduction of ‘outside’ influences to indigenous cultures.

The government has been regulating tourism since the industry began in 1974. By the late 1980s, roughly 3,000 tourists were visiting Bhutan every year, revenue from tourism touching US \$2 million. Fearing that the volume of tourists was becoming unsustainable, the government sought to limit the number by significantly raising the tourist tariff in 1989. As a consequence, that year there were only half as many visitors but revenue fell only slightly to US \$1.95 million. Three years later, the absolute number was up again to 2 748 while revenue soared to US \$3.3 million, accounting for roughly 15%-20% of the total value of Bhutan’s exported goods and services. In 2000, more than 7000 tourists visited Bhutan. Given the overall success of its high-value strategy, the government is expecting tourism to continue to provide a sizable portion of the country’s total foreign revenue earnings.

At the same time, environmental and cultural protection remains high on the government’s agenda. For instance strategies for the development of the tourism sector in the 8th Five Year Plan include efforts ‘... to make Bhutan’s tourism industry responsible and sensitive to the environment through the promulgation of rules and regulations for tourist activities and increasing awareness and training of tourist and hospitality industry personnel.’ To this end, the Ministry of Trade and Industry has drawn up some guidelines for the sector. Among the more significant of the remedies being advocated are the following:

- Substitution of kerosene and liquid petroleum gasoline for fuelwood;
- Construction of permanent campsites, rest houses and toilet facilities along the established trekking routes;
- Full retrieval of all non-biodegradable waste;
- Establishment of a Tourism Development Committee with members from private sector tour operators and stakeholder agencies;
- Rules and regulations for trekking;
- Establishment of an Association of Bhutanese Tour Operators (ABTO) to promote sustainable tourism development;

To address various forms of “cultural pollution”, Bhutan has prepared guidelines that focus on imposing standards of etiquette and dress and limiting tourism to select and hence minimal areas of the country. Tourist guides are also trained about local culture and history in order to influence tourist behaviour. There are also plans to levy an environmental fee on all visitors to Bhutan. Revenue from this fee would be used to underwrite the costs of providing ecologically benign facilities and general maintenance and cleaning services. A comprehensive ecotourism project that protects and preserves

the pristine environment and traditional culture while at the same time ensures a fair share of tourism revenue to traditional local community also needs to be implemented.

Tourism is one of the fastest growing industries the world over. Between 1990 and 1998 alone, international tourism receipts for the world as a whole grew from about US \$269 billion to US \$445 billion, an annual growth rate of 6.4%. The sector is also an important means of achieving socioeconomic development particularly for developing countries such as Bhutan. The sector can help in promoting understanding among peoples and building closer ties of friendship based on appreciation and respect for different cultures and lifestyles. Most importantly, by its very nature it provides an interface between economic development and the environment. It can provide a major economic rationale for the protection and conservation of scenic and biologically valuable areas and can generate direct visitor pay back into the management of these areas and their economically fragile communities.

The Royal Government of Bhutan has from the outset recognised the need to ensure sustainability in the growth of the sector. Ecotourism and adventure tourism both offer many avenues for the future development of the tourism sector. As the industry looks to expand and improve its infrastructure and attract more tourists through vigorous marketing and publicity, it will need to strengthen its drive towards environmental protection and awareness.

#### **4. TOURISM AND DEVELOPMENT IN BHUTAN**

Bhutan, with its natural beauty, rich wildlife and unique culture makes a wonderful and exotic tourist destination. However, it was only in 1974 that Bhutan was opened to international tourism, beginning modestly with only 287 visitors. Bhutan's tourism policy is reflective of the larger development philosophy within Bhutan. While the government's basic goal, as with other developing countries, is to improve the living standards of its people, development in Bhutan is not judged merely by material prosperity and income growth. The Royal Government of Bhutan has repeatedly affirmed the importance of less quantifiable but more meaningful goals such as the happiness, contentment, and the spiritual and emotional well-being of its people. Thus, the government has taken a cautious approach to development. The Royal Government's view is that modernization and development should be guided by the "Gross National Happiness" of the Bhutanese people, rather than by the Gross National Product. Likewise, development should be consistent with Bhutan's capacities and needs.

In formulating and implementing national goals and policies, the government places a great deal of importance on the preservation of Bhutan's natural resources and cultural traditions. This is believed by the government to be as important a priority as economic growth and development. This development philosophy is essentially one of sustainable and equitable development with a human face. Concerned about the impacts of rapid development, the government has adopted the concept of sustainable development, which has become a central theme to Bhutan's development plans. Bhutan's approach to sustainable development was articulated in the Paro Declaration in 1990, the salient points of which are as follows:

‘This is the challenge of sustainable development: to raise the material well-being of all our citizens and to meet their spiritual aspirations, without impoverishing our children and grandchildren ...

The key is to find a development path that will allow the country to meet the pressing needs of the people, particularly in terms of food, health care and education, without undermining the resource base of the economy. New industries, new agricultural markets need to be carefully developed, with respect to their broader environmental ramifications ...

Sustainable development, we believe, is a concept that is in harmony with the cultural and religious traditions of Bhutan. Our nation already has a strong conservation ethic, and indeed respect for the natural world is a central tenet of Buddhism. It is therefore essential that the traditional culture be kept strong so that its values can guide our sustainable development path.’

## **5. TOURISM IN BHUTAN**

Initially, tourism was managed by the Department of Tourism under the Ministry of Finance, which was later reorganized as the Tourism Commercial Organization under the Ministry of Communications and Tourism in 1980. While the policy was still cautious and regulative, tourism activities were made progressively more commercial. This trend continued and culminated in the formation of the Bhutan Tourism Corporation in 1983, which was made a fully autonomous corporation under the Ministry of Trade and Industry.

In the Bhutanese government’s 7<sup>th</sup> five-year plan, an emphasis was placed on increasing the role of the private sector. Thus, the tourism industry was privatized in October 1991. To date, there are 33 licensed operators under the Tourism Authority of Bhutan (TAB), the regulatory body which is a division of the Ministry of Trade and Industry. TAB oversees tourism activities and ensures that operators comply with government policies regarding tourism.

## **6. TOURISM POLICY**

The Royal Government of Bhutan recognises that tourism is an important means of achieving socio-economic development. It also recognises that tourism, by encouraging travel to other countries, can promote understanding among people and build closer ties of friendship based on appreciation and respect for different cultures and lifestyles.

There are, however, problems associated with tourism which, if not controlled, can have devastating and irreversible impacts on the environment, culture and identity of the people. Realising these problems and the fact that the resources on which tourism is based are limited, the government recognises the need to develop the Bhutanese tourism industry based on the principle of sustainability (i.e. it must be environmentally friendly, socially and culturally acceptable, and economically viable).

In order to achieve this objective, the government has adopted a very cautious approach toward the growth and development of the tourism industry. One reason for this was the low level of infrastructure in the country which still needs considerable upgrading. In order to minimise the problems, the number of tourists has been maintained at a manageable level, and this control on numbers is exercised through a policy of government regulated tourist tariffs, and a set of administrative requirements. Due to the government's desire to minimise the adverse effects of tourism, while ensuring a healthy flow of hard currency, the principle of "High Value - Low Volume" tourism has been used.

Rather than limiting the number of visas issued, tourist arrivals are controlled by a pricing policy. This pricing policy means that tourists must come to Bhutan on a package tour, organized by one of the 33 Bhutanese tour operators (foreign travel agents are not allowed to operate in Bhutan). The whole itinerary, whether it is a cultural tour, trekking or a mixture of both, is organized by the tour operator. The fully inclusive price set by the government is presently US\$200 per day, per person. Of this tariff, a 10% commission goes to the external foreign travel agent, 35% is paid as a government royalty, and the remainder is the tour operator's to be spent in Bhutan. The tariff increases if tourists want to travel alone or in very small groups. This is because these small groups incur higher per capita expenditure and have a greater impact on the environment than larger groups. There are, however, concessions available for children and students. If at any point it is felt that the number of arrivals is escalating out of control, the pricing policy may be reviewed and the prices increased. The manageable level of arrivals will depend on the current infrastructure in the country. As infrastructure improves, the carrying capacity will rise.

Trekking in Bhutan requires another permit from the TAB. This is to ensure that no one route is over used or new ones opened without prior approval from the TAB. Trekking tours are only conducted on approved trails and camping in designated campsites. This also helps to even out the density of tourists on the different trekking routes, spreading the income from tourism evenly to the local communities in these areas.

## CHAPTER XIV

### 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:** EIA guidelines, 1993;

**Key Institutions:** National Environment Commission Secretariat; Planning Commission;; Ministry of Rural Development; Ministry of Rural Development

#### 1. ENVIRONMENTAL ASSESSMENTS IN BHUTAN

Draft EIA guidelines for Bhutan were prepared in 1993 by the National Environment Commission Secretariat. The guidelines were generic in nature (not tailored closely to Bhutanese conditions) and institutional arrangements were not clearly defined. In addition, lack of suitably trained personnel restrained NEC and other government ministries from pursuing the guidelines effectively. The EIA guidelines were revised in 1999. In the revised guidelines, 4 categories of projects were identified based on the nature of impacts. The categories of project are the following:

- **Category A:** Proposals which require a full environmental assessment to establish the extent and magnitude of potential impacts. These projects are usually categorised as complex
- **Category B:** Proposals which have potentially significant impacts, however management and treatment options are well developed and understood. These projects can be adequately managed through application of detailed impact management and monitoring plans.
- **Category C:** Proposals that have moderate impacts, which tend to be repetitive (e.g., certain aspects of road construction, or forest harvesting practices). These impacts can be managed by attaching environmental codes-of-best-practice to licenses and permits.
- **Category D:** Proposals that have moderate and easily managed impacts. Simple environmental terms are attached to the business permits or licenses (e.g., waste disposal and hygienic practices for the restaurant business).

Category A, B, and C projects will require environmental clearance by the NEC before the competent authority provides development consent. Category D projects can be issued development consent by the competent authority without obtaining an environmental clearance by NEC. However, the competent authority will submit a list of projects approved under category D to the NEC for annual review. In the years since the EIA guidelines were prepared there has been good progress in implementing the process.

Limitations identified while implementing the EIA process are as follows:

- The lack of comprehensive objectives and standards and the regulatory regimes necessary for it to function most effectively ;
- The shortage of trained environmental personnel in both public and private sectors;
- The lack of environmental awareness and institutions in line ministries, public corporations and private industries;
- The very small private engineering and environmental consulting sector;
- Limited facilities and capabilities for environmental quality analysis; and
- Limited capacity in environmental inventory and research to provide reliable baseline information and to establish cause-effect relationships between development activities.

The Royal Government of Bhutan recognises that an effective way to ensure the long-term sustainability of its natural resource base is to institutionalise EIAs as routine procedures for all relevant development activities. EIAs can be conducted at many levels, from a simple 10-minute environmental questionnaire to a detailed, year-long assessment by independent contractors. Comprehensive EIAs should be applied only to a development project which preliminary screening indicates is likely to have major economic, social, cultural, or biological impacts.

In proposing the institutionalization of EIAs, the Government of Bhutan is seeking to:

- make development projects environmentally and economically sustainable in the long term;
- reduce adverse environmental (physical/biological), economic, cultural, and social impacts;
- identify environmental impacts on ecologically fragile landscapes before development projects proceed;
- assess the effects of development pressures on the natural resource base and people;
- reduce the overall environmental, cultural, social, and economic cost of projects; and
- optimise project benefits.

To achieve its maximum benefit, the proposed EIA system needs to be part of a well-developed and well-understood framework for consulting with all stakeholders including local governments, NGOs, private sector interests, and those segments of the population directly and indirectly affected by proposed projects or policies. In addition, they should be applied to all government and private sector projects, regardless of whether they are

foreign or domestic in origin. Equally important, EIAs must be applied to the policy-making process where it may affect the social, cultural, physical, or natural environment.

The NEC has been given the mandate of developing the national guidelines for EIAs. The National Environmental Secretariat has been put in charge of introducing environmental impact assessments in the Bhutanese context. The priority strategic approaches include:

- Institutionalise Initial Environmental Examinations (IEE) and Environmental Impact Assessments and establish environmental baseline data.
- Develop basic EIA processes, laws and regulations (link with planning, enforcement, participation) and draft a framework for a Bhutanese EIA system, including institutional roles, participatory mechanisms, flow diagrams, and needed legislation/regulations;
- Provide guidelines & training and draft detailed guidelines for priority sectors (hydropower, agriculture, industrial development, tourism);
- Demonstrate EIA on infrastructure projects (roads & hydro development) - to assist the NEC/EIA Task Force with the actual preparation of an EIA for the hydropower and infrastructure sectors. The dual purpose of this is to meet an immediate need of the NEC and to expose a team of Bhutanese practitioners to the rigors of preparing an EIA.



## CHAPTER XV

# MULTILATERAL ENVIRONMENT AGREEMENTS AND THEIR IMPLEMENTATION

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

**Domestic Legislative Measures:** Forest Act 1969, Forest and Nature Conservation Act 1995, Mines and Management Act 1995; Environmental Assessment Act 2000; National Environmental Strategy; Paro Resolution on Environment and Sustainable Development (1990); National Forest Policy, 1974; National Forest Act (1969); Land Law (1979); Pastureland Law (1979); Inheritance law (1979); Livestock Law (1979); Wildlife Act (1985); Plant and Quarantine Act and regulations (1988);

**Key Institutions:** National Environment Committee; National Environment Commission;

### 1. INTRODUCTION

Although there are numerous agreements related to the environment at the international level, a few of particular relevance to countries of the region are mentioned here. As pointed out earlier, some of these are meant exclusively for protection of the environment, while others link environment with trade. However, both types of agreement have an influence on the economies of countries. Bhutan has been partner in the following Multilateral Agreements:

### 2. VIENNA CONVENTION FOR THE PROTECTION OF THE OZONE LAYER, 1985

The Convention is aimed at introducing measures to prevent depletion of the ozone layer. Such depletion, which is a serious threat to human life, has actually resulted from emission of certain toxic gases in the air, either by industrial units or by consumers using certain harmful products.

### 3. MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER, 1987

The Protocol is concerned with phasing out ozone-depleting substances by 2010. This would mean a change in industrial production and consumption patterns throughout an economy.

#### **4. BASEL CONVENTION ON THE CONTROL OF TRANSBOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL, 1989**

The Convention is aimed at controlling the transboundary movements of hazardous wastes and their disposal. On occasion, countries have allowed other countries or industries to dump their hazardous waste by charging them a significant amount of money. These short-term economic gains can have a serious adverse effect on the environment and quality of life of a country.

#### **5. RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT, 1992**

The Rio Earth Summit laid the foundation for a new kind of global partnership to achieve sustainable development and lent impetus to the search for a policy framework that would seek to promote both economic efficiency and environment improvement. The areas of discussion included in the Rio Declaration were

- (a) promoting sustainable development through trade;
- (b) providing adequate financial resources to developing countries; and
- (c) encouraging macroeconomic policies supportive of both environment and development aspirations.

The Declaration is non-binding in nature.

#### **6. AGENDA 21 OF THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT**

This includes a wide range of environmental issues related to forestry, desertification, ocean resources and linkages between trade and environment etc. It is an agreed text adopted by the General Assembly but is non-binding in nature.

#### **7. WORLD TRADE ORGANIZATION**

The negotiations in this international organization concern trade issues. It has adopted some agreements which have a bearing on the environment. These agreements give either incentives for the production and trade of environmentally friendly products or disincentives for the opposite. For example, under one of the WTO agreements, 20 per cent of the cost of adaptation to environmental requirements can be subsidised.

#### **8. UN FRAMEWORK CONVENTION ON CLIMATE CHANGE**

Bhutan was among the 150 countries that signed the United Nations Framework Convention on Climate Change (UNFCCC) at Rio de Janeiro in 1992. The Royal Government of Bhutan ratified this convention at the 73rd session of the National Assembly on August 25th, 1995. After the ratification of the UNFCCC, the RGOB

designated the NEC as the focal point for climate change activities in Bhutan. The Royal Government also set up a National Climate Change Committee.

With the support of the Global Environmental Facility, the Bhutan National Greenhouse Gas Project is being implemented. This project seeks to enhance the capability of the Royal Government of Bhutan, through the NEC Secretariat, to fulfil its obligations to the United Nations Framework Convention on Climate Change under Articles 4 and 12 (Communication of Information Related to Implementation) leading to the National Communication.

The project aims to:

- (a) develop methods, build capacity and strengthen institutions to assess the socio-economic and environmental impacts of climate change; and
- (b) increase the capacity of the RGOB to identify and evaluate policy options and plans for adaptation to possible climate change.

## **9. UN CONVENTION ON BIOLOGICAL DIVERSITY**

The Royal Government of Bhutan ratified this convention at the 73rd session of the National Assembly on August 25th, 1995. After the ratification of the UNCBD, the RGOB designated the NEC as the focal point. The NEC in collaboration with the Nature Conservation Section of the Forestry Services Division has been carrying out the activities related to the convention. An action plan on biological diversity has been recently developed. This action complements the overall development activities. National Mechanisms and Legal Instruments

## **5. DOMESTIC LEGISLATIVE MEASURES**

Development of law at the national level with relation to sustainable development has led to legislation on environmental and environment-related issues by adding regulatory instruments with well-defined requirements

The Program for Further Implementation of Agenda 21 established the target year of 2002 for all countries to have formulated national sustainable development strategies. Bhutan's national strategy, the National Environment Strategy, has already been in place for four years now, making the Kingdom one of the 85 countries globally to have completed such a sustainable development strategy.

Bhutan has used a combination of the sustainable development strategy and five-year development sector plans. These sectoral plans have facilitated the Government in receiving financial resources for helping decision-makers to achieve and measure progress toward sustainable development goals and targets. The National Environment Commission (NEC) is the national coordinator of the country's sustainable development strategy; its long-term objective is to define policies, programs, plans and actions for promoting and ensuring the sustainability of Bhutan's natural resources. The NEC

provides input into major policy areas in which environmental concerns and economic development need to be balanced, such as:

- tourism;
- road access;
- resource-based mechanisms for financing sustainability;
- public health;
- urbanisation; and
- population and sustainability.

Development of law at the national level with relation to sustainable development has led to legislation on sectoral environmental and environment-related issues by adding regulatory instruments with well-defined requirements. Policies also have been refocused to better integrate fragmented sectoral laws and regulations into a coherent framework, streamlining and harmonising regulatory requirements.

A prerequisite for creating environmental legislation is the establishment of environmental standards. Such standards have never been systematically developed for Bhutan, which has itself often led to the adoption of regional and international standards. Environmental legislation eventually will be developed for all sectors based on environmental quality standards determined by the National Environment Commission and sectoral Ministries.

The majority of Bhutan's existing environmental legislation concerns the conservation of forests and the protection of wildlife and their habitats. More recent legislation covers the industrial and mining sectors and environmental assessment, as has been mentioned. The next set of environmental laws in Bhutan will have to be built upon the framework of current laws such as the Forest Act 1969, Forest and Nature Conservation Act 1995, Mines and Management Act 1995 and the Environmental Assessment Act 2000. In addition, an umbrella law is needed to facilitate implementation of a holistic approach to environmental issues. The Royal Government has thus initiated the development of such a law, the National Environmental Protection Act, which is currently under way. Committee members for the formulation of this Act have already undergone training in various field of environmental law.

Bhutan participates actively in both global and regional forums on sustainable development issues. It has signed and ratified the Rio instruments as well as the Convention on Biological Diversity. Toward meeting the obligations of the latter, the Biodiversity Action Plan was prepared in 1998. Bhutan also has signed and ratified the United Nations Framework Convention on Climate Change and participates actively in the South Asian Association of Regional Cooperation (SAARC) Environment Ministers fora. It further participates in other bilateral and multilateral fora of the United Nations Environment Program (UNEP), the Economic and Social Commission for Asia and the

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Pacific (ESCAP), World Bank, Asian Development Bank and the International Center for Integrated Mountain Development (ICIMOD).

**APPENDIX A****LIST OF ABBREVIATIONS**

<b>ACRONYM</b>	<b>MEANING</b>
<b>ADB</b>	<i>Asian Development Bank</i>
<b>AUSAID</b>	<i>Australian Agency for International Development</i>
<b>BOBP</b>	<i>Bay of Bengal Program(me)</i>
<b>CBD</b>	<i>Convention on Biological Diversity</i>
<b>CBOs</b>	<i>Community-Based Organisations</i>
<b>Danida</b>	<i>Danish International Development Agency</i>
<b>DYT</b>	<i>Dzongkhag Yargey Tshogchung (district development committees)</i>
<b>EEZ</b>	<i>Exclusive Economic Zone</i>
<b>EIA</b>	<i>Environmental Impact Assessment</i>
<b>EPA</b>	<i>Environmental Protection Act</i>
<b>ESCAP</b>	<i>Economic and Social Commission for Asia and the Pacific</i>
<b>ESPS</b>	<i>Environment Sector Programme Support</i>
<b>GEF</b>	<i>Global Environment Fund</i>
<b>GYT</b>	<i>Geog Yargey Tshogchung (block development committees)</i>
<b>ICIMOD</b>	<i>International Center for Integrated Mountain Development</i>
<b>ICJ</b>	<i>International Court of Justice</i>
<b>ICTPs</b>	<i>International Conventions/Treaties/Protocols</i>
<b>JICA</b>	<i>Japan International Co-operation Agency</i>
<b>MEA</b>	<i>Multilateral Environment Agreements</i>
<b>NCPE</b>	<i>National Commission for the Protection of the Environment</i>
<b>NEC</b>	<i>National Environment Commission</i>
<b>NECS</b>	<i>National Environment Secretariat</i>
<b>NES</b>	<i>National Environmental Strategy</i>
<b>NGOs</b>	<i>Non-Government Organisations</i>
<b>NORAD</b>	<i>Norwegian Agency for Development Cooperation</i>
<b>PIL</b>	<i>Public Interest Litigation</i>
<b>RGoB</b>	<i>Royal Government of Bhutan</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>SAPAP</b>	<i>South Asian Poverty Alleviation Program(me)</i>
<b>tpd</b>	<i>tonne per day</i>
<b>UN FCCC</b>	<i>United Nations Framework Convention on Climate Change</i>
<b>UNCCD</b>	<i>United Nations Convention to Combat Desertification</i>
<b>UNDP</b>	<i>United Nations Development Program(me)</i>
<b>UNEP</b>	<i>United Nations Environment Program(me)</i>